AMERICAN GAS ASSOCIATION MONTHLY

Vol. VIII No. 9

SEPTEMBER, 1926

October 11 to 15
Atlantic City

—

Eighth
Annual Convention

American Gas Association

(For Details See Page 515)

"The Future of the Gas Industry"

By GEO. B. CORTELYOU

President, Consolidated Gas Company of New York

UNDER this title, Mr. Cortelyou discusses the present position and future outlook for our business in the August issue of *The Bankers Magazine*. Here is an article that every executive, every employee and every director should read. Furthermore, copies should be sent to bankers, prominent business men, heads of local civic organizations and others.*

By special arrangement with *The Bankers Magazine*, the Association is able to offer reprints of this article at cost. Already orders for more than twenty thousand copies have been received, and every company is requested to place its order immediately if prompt delivery is wanted.

Place Your Order Now—
The Price is $20.00 a thousand

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* The article appears on page 529 of this issue of The Monthly. Read it and place your order immediately.

AMERICAN GAS ASSOCIATION MONTHLY

342 MADISON AVENUE, NEW YORK, N. Y.

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SUBSCRIPTION RATE — *$3.00 PER YEAR*

For statements and opinions contained in papers and discussions appearing herein, the Association does not hold itself responsible.

Entered as Second Class Mail Matter at the Post Office at Brattleboro, Vermont, February 10th, 1922, under the Act of March 3, 1879.

Our Own Who's Who

XVI

Philip Henry Gadsden

BORN, Charleston, S. C., 1867. Educated in private schools in Charleston, the Porter Military Academy, and graduated from South Carolina University in 1888 with A.B. degree. Received LL.D from his Alma Mater in 1918. Admitted to bar in 1890 and actively engaged in practice of law for 17 years. Served six years in South Carolina Legislature. Retired from law practice in 1907 to direct local utilities. Was president of Charleston Consolidated Railway and Lighting Company, and vice-president of Charleston Light & Power Company. In 1918 became vice-president of United Gas Improvement Co., Philadelphia, Pa., in charge of department of public relations. Is president and director of Philadelphia Chamber of Commerce, director of Pennsylvania State Chamber of Commerce, director of Chamber of Commerce of U. S. Has been president of American Elec. Railway Assoc., Southern Gas Assoc., and Eastern States Gas Conference. Was in Washington for duration of World War and was chairman of National Committee on Public Utility conditions.

AMERICAN GAS ASSOCIATION MONTHLY

Vol. VIII SEPTEMBER, 1926 No. 9

Every One is Going to Atlantic City

To Attend the Best Convention Yet; Oct. 11-15 is Scribbled on Thousands of Calendar Pads

THE Million Dollar Pier, the largest and most famous of all the piers in Atlantic City, will be the scene of the Eighth Annual Convention and Exhibition of the American Gas Association, to be held Oct. 11-15. Gas men from all parts of the United States will gather at the popular ocean resort to take part in the general and sectional programs, to determine again the policies of the manufactured gas industry, the progress made and to be made.

In making the preliminary announcement call to the convention, Harry C. Abell, President, called the members' attention to the fact that the theme of the entire convention would be based on the report of the Three-to-Five-Year Program Committee that was made at the last meeting of the Advisory Council and Executive Board of the Association. Coupled with the announcements that every step is being taken to insure the enjoyment of the members and their

5000 Gas Men Will Meet Here Oct. 11 to 15

Part of the Famous Boardwalk in Atlantic City

guests—such as the elimination of printed reports delivered from the rostrum—and that all sessions will be short and snappy, is the assurance that the Eighth Annual Convention will be the biggest and best ever held. Interesting and timely business sessions, entertainment of a "different" kind, will be the gas man's bill of fare. The Million Dollar Pier will be the silver platter!

The Exhibition, which is always the chief drawing card at the annual meeting, will, this year, be the world's largest display of gas appliances and equipment. (Further details of this are given on page 563.) Eclipsing the exhibition of 1925, this year's show will be by far the most interesting ever held.

The entire Million Dollar Pier will be at the disposal of the gas men, with the exception of the villa and Italian Garden of Captain Young, owner of the Pier. In the past, A. G. A. conventions have all shown remarkable growth over previous years, but the 1926 meeting will establish an unprecedented record. The Association has been forced to take care of record-breaking demands for space for the Exhibition and provide additional room for meeting places; the only solution offered was the leasing of the largest pier Atlantic City could offer.

The general sessions will be held in a room much larger than any that has been used for this purpose in the past. Moreover, the acoustic properties of the room are excellent and the decorations tasteful. There are two other meeting rooms on the pier, and these will be used for section meetings, probably by the Commercial and Industrial men. Both these rooms are large and airy.

The ballroom, which is located just off the boardwalk, is the largest and best of any along Atlantic City's four-mile ocean front. This room will be used as a lounge room, as a meeting place for the members and their guests, for teas, etc. At night the gas men may listen to the rythmical strains of Harold Leonard and his Waldorf-Astoria Orchestra, and dance until the wee sma' hours.

GENERAL SESSIONS

No gas man who is wide awake to the problems and opportunities of the gas business will miss one of these meetings. Based on the report of the Three-to-Five-Year Program Committee, the high spots of which are outlined here, the subjects to be presented are of vital importance to the entire industry. No one can deny the high calibre of the speakers, and no one can dispute the fact that they will treat their subjects with care, bringing home to the members of the Association the salient points that are timely and vital to this most important industry.

SECTIONS ACTIVE

The sectional organizations of the Association have been very active the past year, and the programs of their meetings

Atlantic City, the Playground of the Gas Industry

Every Gas Man Will Have the Key to Atlantic City from Oct. 11 to 15, the Dates of the Biggest and Best Convention.

will be the most interesting and comprehensive ever presented to the members of the individual groups.

"The general sessions are the expression of the entire industry," says Alexander Forward, in commenting on the programs as outlined by the various sections. "The Sectional meetings give the members the opportunity to tie-in the national viewpoint to their own particular jobs and problems. It is here that full opportunity is afforded for individual discussion of topics and a close study of impending developments."

Every effort has been made to reduce to a minimum the presentation of reports, and to substitute in their place an oral recital of the most important features covered, allowing ample time for discussion. This year the sectional programs are of a particularly high order of excellence and many of the speakers have a national reputation.

THAT the Program Committee has picked the most timely subject as a general theme is apparent on study of the recommendations made by the Three-To-Five-Year Program Committee. Roughly, these recommendations are:

1. Improvement of sales methods for the purpose of retaining and expanding the domestic load.
2. Proper rate structures.
3. Technical research.
4. Safety work.
5. Laboratory.
6. Industrial load, touching upon advertising, exhibit of appliances, and research.
7. National advertising.
8. Education

ENTERTAINMENT

While first and foremost attention is given to the business sessions and exhibits, there is also ample assurance that the entertainment program will prove equally attractive during those hours not devoted to the business of the industry. The Committee has planned a program of wide appeal.

Harold Leonard's Waldorf-Astoria Orchestra will furnish musical delight for the dancers, and all who have heard

The Front Door of the Pier Is the "Open Door" to the Industry

A Scene That Will Bring Pleasant Memories to the Gas Man.

this orchestra, either at the hotel or over the radio, will agree that Mr. Leonard and his men can give genuine entertainment.

All the entertainment features have not been divulged at present but announcement will be made in due time. No tickets will be sold or required this year, following the practice adopted in 1925. It has been decided that the registration fee will be sufficient to cover all entertainment expenses. Admission to all functions, entertainment or otherwise, will be by Convention Badge. (Registration fee, for members, $2.00; for non-members, $3.00.)

The principal entertainment features are as follows:

Tuesday afternoon, Oct. 12—There will be a tea and concert for ladies and lion Dollar Pier at 4 o'clock. Tea will be served by the Home Service Committee.

Tuesday evening, Oct. 12—On this evening will be held the President's Reception in the Ballroom. The reception will be from 9 to 10 o'clock, followed by dancing to Leonard's music.

Wednesday afternoon, Oct. 13—The Association will entertain as their guests the ladies attending the Convention at a luncheon at 1 o'clock in the Submarine Grill of the Hotel Traymore. This will be followed by cards on the balcony of the European Restaurant of the hotel.

Wednesday evening, Oct. 13—Following the adjournment of the Public Relations Symposium, which will be held in the large meeting room on the Million Dollar Pier, there will be general dancing in the Ballroom. Again Harold Leonard's music will guide the dancing feet of our members and guests.

Thursday afternoon, Oct. 14—A ladies' tea and concert will be given in the Ballroom on the Million Dollar Pier.

Thursday evening, Oct. 14—The order of the dance will prevail this evening.

Golfing—As in previous years, the Committee has been enabled to arrange, through the courtesy of C. H. Geist, for golfing privileges for our members and guests at the famous Seaview Golf Club. To enjoy these, all that needs to be done is to obtain a letter of introduction at the Registration Desk. These golfing privi-

There Will Also Be Golf

leges are from Monday, October 11th to Friday, Oct. 15th, inclusive. The regular greens fees, etc., will be charged.

Although Atlantic City is in no sense new to the American Gas Association, nevertheless there are many important changes which have been made since the 1925 meeting and which will be immediately apparent to all those who attend the Convention in October. Several of the large boardwalk hotels have recently completed new additions.

To those members of the A. G. A. who availed themselves of the splendid hospitality which was everywhere evident at the several annual conventions which have been held in Atlantic City in years past, the present announcement concerning this year's Convention in this delightful seaside resort must certainly arouse some very pleasant anticipations. The demands for exhibition space have been much greater than in previous years, and all indications are that the Eighth Convention will far exceed those that have preceded in point of attendance and importance to the industry.

Above: The Million Dollar Pier Is Shown in the Background. It Is the Largest and Best Pier at Atlantic City—the Meeting Place Supreme! If you haven't decided to attend, read the program and you'll know you can't afford to stay home.

Center: Night View of the Famous Villa of Captain Young. Below: The Daily Fish Haul Is a Feature of the Million Dollar Pier. These are but two of the interesting sights that every gas man will want to see. Atlantic City is full of just such scenes.

The following advance program of general and sectional meetings of the Convention has been prepared for the MONTHLY. This program is published as a matter of information to our readers and is to be regarded as only tentative. Final programs will be distributed during registration in Atlantic City.

A. G. A. 1926 CONVENTION PROGRAM

First General Session

(Hippodrome, Million Dollar Pier)

Tuesday Morning, October 12, ten o'clock

Opening Remarks	President H. C. Abell, Electric Bond & Share Co., New York, N. Y.
Report	Treasurer, H. M. Brundage, Consolidated Gas Company, New York, N. Y.
Report	Secretary-Manager, Alexander Forward
President's Address	"The Association's Program," President H. C. Abell
Report	Nominating Committee, Wm. M. Crane, Chairman.
Address	"Economic Advantages of the Gas Industry As Related to Its Competitors," Dean Ralph E. Heilman, School of Commerce, Northwestern University, Chicago, Ill.
Address	"National Advertising for the Gas Industry and for the Manufacturers of Gas Appliances," Edw. S. Jordan, President, Jordan Motor Company, Detroit, Mich.
Report	Committee on Amendments to the Constitution, W. J. Clark, Chairman, Westchester Lighting Company, Yonkers, N. Y.
Executive Session	(Only Company Member Delegates Eligible to Attend) Election of Company Members, Election of Directors, Election of 1926 Nominating Committee, Election of Committee on Resolutions, Election of Active Individual Members.

Second General Session

Wednesday Morning, October 13, ten o'clock

Address	"Selling All the Gas That Should Be Sold in the Home," Philip Cabot, Harvard Graduate School of Business Administration, Cambridge, Mass.

Address	"The Gas Industry and the American Manufacturer," James R. Allen, Industrial Engineer, International Harvester Co., Chicago, Ill.
Address	"The Public's Measure of An Industry," David Lawrence, Publisher, United States Daily, Washington, D. C.
Address	"Perfecting Service and Safety," Geo. K. Burgess, Director, Bureau of Standards, Washington, D. C.
Presentation Award of 1925, A. G. A. Meritorious Service and McCarter Medals,	Thomas N. McCarter, President, Public Service Electric and Gas Company, Newark, N. J. and H. C. Abell, President, A. G. A.

Public Relations Symposium

(Hippodrome, Million Dollar Pier)

Wednesday Evening, October 13, nine o'clock

The Program will consist of two addresses by people nationally prominent. Miss Anna Case, world-famed soprano, will be the entertainment feature. Further announcements will be made in the near future.

Third General Session

Thursday Morning, October 14, ten o'clock

Report	Consolidated Report of General Committees, Secretary-Manager, Alexander Forward.
Report	Committee on President's Address.
Report	Committee on Resolutions.
Report	Time and Place Committee (1927 Meeting), A. B. Tenney, Chas. H. Tenney & Co., Boston, Mass.
Address	"Commission Regulation and Its Influence on the Stability of Utility Securities," Speaker to Be Announced.
Address	"Building a Rate to Build the Business," C. S. Reed, Rate Consultant, A. G. A.
Closing Remarks	

Accounting Section

Tuesday Afternoon, October 12, two o'clock

Opening Remarks and Report of Chairman	Chairman, DeWitt Clinton, Worcester Gas Light Co., Worcester, Mass.
Report	Nominating Committee, H. C. Davidson, Chairman, Consolidated Gas Co. of N. Y., New York, N. Y.
Report	Exhibit Committee, Sidney Curren, Chairman, Public Service Electric & Gas Co., Newark, N. J.
Report	Insurance Committee, J. G. Reese, Chairman, Consolidated Gas, Elec. Lt. & Pr. Co., Baltimore, Md.
Report	Relations with Customers Committee, J. M. Roberts, Chairman, The Peoples Gas Light & Coke Co., Chicago, Ill.

Wednesday Afternoon, October 13, two o'clock

Report	Gas Company Audits and Auditing Committee, A. S. Corson, Chairman, The United Gas Improvement Co., Philadelphia, Pa.

DEAN RALPH E. HEILMAN
of Northwestern University
Will Speak at the A. G. A.
Convention on
"Economic Advantages of the Gas Industry as Related to Its Competitors."
Will You Be There To Hear Him?
Atlantic City Oct. 11-15
Million Dollar Pier

EDW. S. JORDAN
President, Jordan Motor Company
Is to Address the A. G. A.
Convention on
"National Advertising for the Gas Industry and the Manufacturers of Gas Appliances."
His Message is for YOU.
Atlantic City Oct. 11-15
Million Dollar Pier

Paper	"Customers Accounting System of the Consolidated Gas Company of New York," G. A. Burrows, Consolidated Gas Co. of N. Y., New York, N. Y.
Report	Statistics and Cost Accounting Committee, James E. Kane, Chairman, Consolidated Gas Elec. Lt. & Pr. Co., Baltimore, Md.
Report	Going Value Committee, J. I. Blanchfield, Chairman, Brooklyn Union Gas Co., Brooklyn, N. Y.
	Thursday Afternoon, October 14, two o'clock
Report	Storeroom Accounting and Inventory Taking Committee, F. H. Patterson, Chairman, Rochester Gas & Electric Corp'n, Rochester, N. Y.
Report	Committee on Cost of Operating Motors and Mechanical Equipment in Distribution Work, J. Henderson Smith, Chairman, The United Gas Improvement Co., Philadelphia, Pa.
Report	Committee on Uniform Classification of Accounts, W. J. Meyers, Chairman, United Electric Light & Power Co., New York, N. Y.
Report	State Representatives Committee, A. L. Tossell, Chairman, The Peoples Gas Light & Coke Co., Chicago, Ill.

Commercial Section

Tuesday Afternoon, October 12, two o'clock

Opening Remarks	Chairman, R. J. Canniff, Standard Gas Equipment Corp., Chicago, Ill.
Report	Nominating Committee, J. P. Hanlan, Chairman, Public Service Electric and Gas Company, Newark, N. J.
Address	"Domestic Gas Facts and Fancies," Floyd W. Parsons, Editorial Director, *Gas Age-Record*, New York, N. Y.
Address	"Selling Gas by Stopping Heat Losses," Speaker to Be Announced.
Address	"Windows and Displays," Speaker to Be Announced.
Address	"Building the Domestic Load Through Merchandise Sales," T. L. Kennedy, Henry L. Doherty & Company, New York, N. Y., H. N. McConnell, Electric Bond & Share Co., New York, N. Y., and

J. E. Davies,
Peoples Gas Stores, Inc.,
Chicago, Ill.

Wednesday Afternoon, October 13, two o'clock

Address "Modernizing the Basement,"
A. A. Naulin, Chairman,
Incineration Committee

Address "Selling House Heating,"
H. Leigh Whitelaw, Chairman,
House Heating Committee,

Address "Home Service,"
C. C. Curtis,
Vice-President, Fall River Gas Works Co.,
Fall River, Mass.

Address "Selling the Laundry Load,"
S. T. Heed,
President, Hurley Machine Co.,
Chicago, Ill.

Address "Water Heating Sales,"
F. A. Lemke,
President, Humphrey Company,
Kalamazoo, Mich.

Thursday Afternoon, October 14, two o'clock

Address "Selling to the Speculative Builder,"
Bernard Johnson,
Editor, *American Builder,*
Chicago, Ill.

Address "Reaching the Architect,"
Speaker to Be Announced.

Address "Recent Developments in Refrigeration,"
H. D. Valentine, Chairman,
Refrigeration Committee.

Address "The Blue Star Campaign,"
To be presented by three representatives of companies promoting the Blue Star campaign.

Symposium "Sales Stimulation."

Address "Commercial Aspects of the A. G. A. Laboratory,"
R. M. Gallagher,
Chairman, Laboratory Managing Committee.

Industrial Gas Section

Tuesday Afternoon, October 12, two o'clock

Opening Remarks Chairman, F. F. Cauley,
The Peoples Gas Light & Coke Company,
Chicago, Ill.

Report Nominating Committee.

Paper "Organization and Operation of an Industrial Gas Sales Department,"
D. A. Campbell,
Kansas City Gas Company,
Kansas City, Mo.

Report Advertising Committee,
J. F. Weedon, Chairman,
The Peoples Gas Light & Coke Company,
Chicago, Ill.

Report Survey Committee,
R. L. Manier, Chairman,
Syracuse Lighting Company,
Syracuse, N. Y.

Wednesday Afternoon, October 13, two o'clock

Report Policy Committee,
C. C. Krausse, Chairman,
Consolidated Gas, Electric Light and Power Company,
Baltimore, Md.

Report Progress Committee,
H. A. Clark, Chairman,
Detroit City Gas Company,
Detroit, Mich.

Address	"The Industrial Gas Sales Department and the Gas Company," C. E. Paige, Vice-President, Brooklyn Union Gas Company, Brooklyn, N. Y.
Paper	"Malleableizing Kiln at Northwestern Malleable Iron Company, Milwaukee, Wis." Geo. Blakney, Superintendent, Northwestern Malleable Iron Company, Milwaukee, Wis.
Report	Publicity Committee, H. O. Andrew, Chairman, Robbins Publishing Co., New York, N. Y.

Thursday Afternoon, October 14, two o'clock

Report	Speaker's Bureau, H. O. Loebell, Chairman, Henry L. Doherty Company, New York, N. Y.
Paper	"Description of Installation of Rotary Carbonizing Machines—Link Belt Company, Indianapolis, Ind." F. S. O'Neill, Works Manager, Belmont Plant, Link Belt Company, Indianapolis, Ind.
Paper	"Description of Installation of Continuous Heat Treatment Furnaces—Studebaker Plant, South Bend, Ind." Carl Lekberg, Northern Indiana Gas & Electric Company, South Bend, Ind.
Report	Committee on Education of Industrial Gas Salesmen, J. P. Leinroth, Chairman, Public Service Electric & Gas Company, Newark, N. J.

Manufacturer's Section

Monday Afternoon, October 11, two o'clock

Opening Remarks	Chairman, Watson E. Derwent, Geo. D. Roper Corp'n, Rockford, Ill.
Report	Nominating Committee, Wendell L. Smith, Chairman, A-B Stove Company, Battle Creek, Mich.
Election	
Report	A. G. A. Appliance Testing Laboratory, R. M. Conner, Director.
Reports	Division Chairman, Distribution Equipment, W. G. Gribbel, John J. Griffen & Co., Philadelphia, Pa. Gas Manufacturing and Auxiliary Equipment, F. J. Kennedy, West Gas Improvement Company, New York, N. Y. Mechanical Office Equipment, E. A. Norman, Elliott-Fisher Company, New York, N. Y. Utilization Appliances, H. L. Whitelaw, American Gas Products Corp'n, New York, N. Y.
New Business	

Publicity and Advertising Section

Tuesday, Afternoon, Oct. 12, two o'clock

Opening Remarks and Report of Chairman	Chairman, Frank L. Blanchard, H. L. Doherty & Company, New York, N. Y.
Report	Nominating Committee, J. S. S. Richardson, Chairman, Director, Pennsylvania Public Service Information Committee, Philadelphia, Pa.
Address	"Does the Gas Industry Need National Advertising?" Speaker to Be Announced.
Address	"How the State Information Committees Can Help Make National Advertising More Effective," Speaker to Be Announced.
Symposium	"National Advertising."

Technical Section

Tuesday Afternoon, October 12, two o'clock

Opening Remarks and Report of Chairman	Chairman, J. P. Haftenkamp, Rochester Gas & Electric Corp'n, Rochester, N. Y.
Report	Chemical Committee, A. C. Fieldner, Chairman, U. S. Bureau of Mines, Pittsburgh, Pa.
Paper	"Waterless Holders," Speaker to Be Announced.
Report	Comments on the Carbonization Committee Report, R. S. McBride, Colorado Bldg., Washington, D. C.
Report	Nominating Committee, R. C. Cornish, Chairman, American Gas Company, Philadelphia, Pa.

Wednesday Afternoon, October 13, two o'clock

Paper	"Dehydration of Manufactured Gas" F. W. Sperr, Jr., Koppers Company, Pittsburgh, Pa.
Report	Distribution Committee, D. A. Powell, Chairman, Milwaukee Gas Light Company, Milwaukee, Wis. a. "Distribution Design," D. P. Hartson, Equitable Gas Company, Pittsburgh, Pa.

Thursday Afternoon, October 14, two o'clock

Report	Measurement of Large Volumes of Gas Committee. M. E. Benesh, Chairman, The Peoples Gas Light & Coke Company, Chicago, Ill.
Report	Water Gas Committee, Presentation by L. E. Knowlton, Providence Gas Company, Providence, R. I.

GEO. K. BURGESS
Director, Bureau of Standards
Is to Speak at the A. G. A.
Convention on
"Perfecting Service and Safety"
A timely Message for all—Are
YOU Going to Be There?
Atlantic City Oct. 11-15
Million Dollar Pier

DAVID LAWRENCE
Editor, United States Daily
Well-Known Political Writer
Will Speak at the A. G. A.
Convention on
"The Public's Measure of An Industry."
Are YOU Going to Hear Him?
Atlantic City Oct. 11-15
Million Dollar Pier

"Palaces by the Sea"—the A. G. A.'s Favorite Convention Center

Reduced fare privileges have been granted to A. G. A. members and their immediate families attending the Convention. Identification certificates required for this purpose will be mailed from Headquarters on or about September 15 and are applicable only to members of the A. G. A. and dependent members of their families. Round trip tickets will be sold at one and one-half fare on presentation of these certificates. Following is the list of territories and railroads on which the reduced fare privilege is in effect:

Territories

New England Passenger Association

Boston and Albany Railroad.
Boston and Maine Railroad.
Central Vermont Railway.
Central New England Railway.
Grand Trunk Railway System (Maine, New Hampshire and Vermont.)
Maine Central Railroad.
Montpelier and Wells River Railroad.
Narragansett Pier Railroad.
New England Steamship Company.
New York, New Haven and Hartford Railroad.
Rutland Railroad.
St. Johnsbury and Lake Champlain Railroad.

Tickets must be purchased October 7-13 with final return limit to reach original starting point not later than midnight of October 21.

Central Passenger Association

West of Buffalo, Niagara Falls, Salamanca, Pittsburgh, Wheeling, Parkersburg, Kenova, to and including Chicago and St. Louis, and north of the Ohio River including Cincinnati, Louisville and Cairo.

Tickets must be purchased October 7-13 with final return limit to reach original starting point not later than midnight of October 21.

Southeastern Passenger Association

South of the Ohio and Potomac Rivers and east of the Mississippi River.

Tickets must be purchased October 7-13 with final return limit to reach original starting point not later than midnight of October 21.

Western Passenger Association

West of Chicago, Peoria, and St. Louis, east of Washington, Oregon and Nevada.

Dates of sale for Illinois, Iowa, Kansas, Manitoba, Missouri, Nebraska, Michigan, North and South Dakota and Wisconsin: October 7-13, final return limit October 21.

Dates of sale for Colorado, Montana, New Mexico, Utah and Wyoming: October 7-13, final return limit October 22.

Southwestern Passenger Association

Southwest of St. Louis, including Texas, Arkansas, Oklahoma, Missouri, south of the Missouri River, and Louisiana west of the Mississippi River.

Dates of sale for Oklahoma, Texas, Kansas and Missouri: October 6-12, final return limit October 22.

Dates of sale for Arkansas and Louisiana: October 7-13, final return limit October 22.

C. S. REED
Rate Consultant, A. G. A.
Will Deliver a Message at the
A. G. A. Convention That No One
Will Want to Miss. It will be
"Building a Rate to Build the Business"
Atlantic City Oct. 11-15
Million Dollar Pier

Canadian Passenger Association

Canada, east of and including Armstrong and Port Arthur, Ontario.

Dates of sale: October 7-13, final return limit October 21.

Transcontinental Passenger Association

Illinois, Iowa, Manitoba, Minnesota, Northern Michigan and Wisconsin.

Dates of sale, October 7-13, final return limit October 21.

From Kansas, Missouri, Nebraska, North Dakota, South Dakota, and Julesburg, Colo.

Dates of sale, October 6-12, final return limit October 22.

From Colorado, except Julesburg, Montana, New Mexico, Utah and Wyoming.

Dates of sale October 6-11, final return limit October 22.

From Arizona, British Columbia, California, Idaho, Nevada, Oregon and Washington.

Dates of sale October 1-7, final return limit October 28.

Certificates must be presented on purchase of ticket and validated for return at Atlantic City, New Jersey, at the regular ticket office of the lines over which ticket reads on any date after arrival, and prior to final return limit.

A list of Atlantic City hotels and special convention rates will be mailed to the members in time for reservation.

REGISTRATION FEE

As in the past, the registration fee for members of the American Gas Association will be $2. The fee for non-members will be $3, which is an increase of one dollar over previous years.

"There Is no Tonic Like a Brisk Walk on the Boardwalk, no Bracer Like the Ocean Air."

Obviously, This Is a Golf Course, and Actually It Is to Be at the Gas Man's Disposal the Week of the Convention.

TELL THE WORLD!

DO you know that an A. G. A. Convention gives you an unexcelled opportunity for constructive publicity for your company?

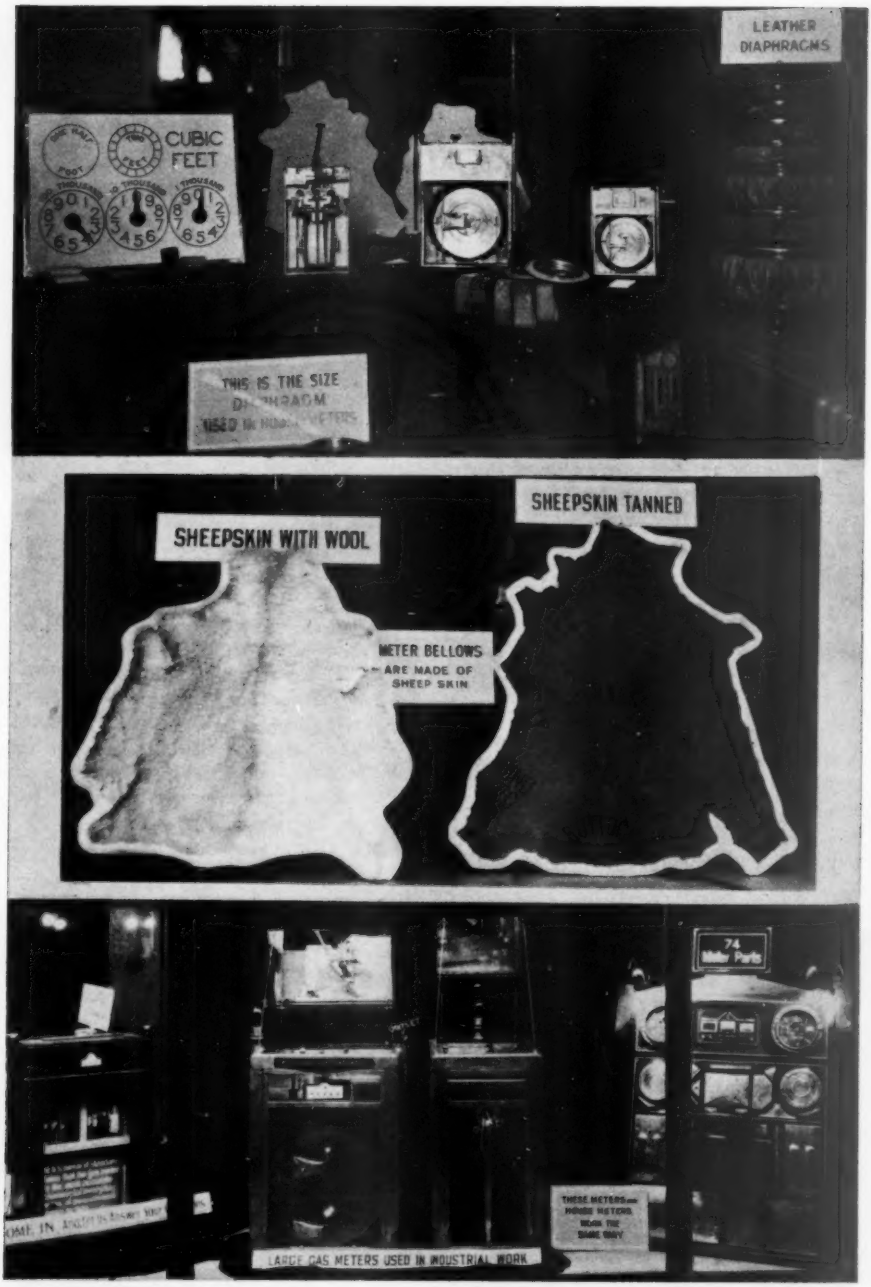
Make it a point this year to get your newspaper editors interested. First, give them an interview *before* you leave for Atlantic City. Tell them who is going and why. Then give them an interview *after* you return home.

At both interviews concentrate on those subjects which will interest the greatest number of gas users.

Among developments capable of news treatment are:

Laboratory-approved appliances, house heating, incineration, home service work, automatic hot water service, oven-regulated meals, refrigeration, industrial gas —to mention only a few.

Get local publicity for yourself and your company out of the 1926 Convention. And make your plans for getting it right now.



Interesting Meter Exhibit Used Recently in the Windows of the Providence Gas Company, Providence, R. I.

The Future of the Gas Industry

Stability Is Dominating Characteristic of Industry That Is No Longer Hiding Its Light Under a Bushel

By GEO. B. CORTELYOU
President, Consolidated Gas Company of New York

Geo. B. Cortelyou

ONLY a few years ago there were those who asserted in all seriousness that the gas industry had no future. They said all it had was a past; that it was a dying business, doomed to extinction because the demand for gas was growing less and less each year. And they warned investors away from the securities of gas companies.

Well, of course, it is something to have a past; and all gas men are proud of the past of their industry with its record of public service reaching back more than a century. But it has more than a past. It has a present and, as the title of this article indicates, it also has a future. Its more recent achievements have been such that even the outspoken skeptics of a few years back have since admitted their error and have brought forth "works meet for repentance" by proclaiming their faith in the soundness and stability of the industry and recommending its securities to investors.

What led certain superficial observers into thinking that gas was on the wane was the change in the character of its use. They saw it decline in importance as an illuminant, which formerly was its principal use, and concluded that this heralded a permanent downward trend. What they apparently did not realize was that this loss was more than made up by gains in other directions, which put the industry on a more solid and prosperous footing than ever before. For industries, as for individuals, life is a continual series of adjustments to changing conditions, and success depends upon the ability to make these adjustments with a minimum of delay and loss. The gas industry has not only adapted itself to the rapidly changing conditions of the past decade, but has gathered strength in the process and at the present time is facing opportunities for growth and expansion unequalled in all its long history.

If the dominating characteristic of the gas industry could be expressed in one word, that word would be "stability." The oldest of our utilities, it has gone ahead quietly and steadily year after year, extending its facilities, adding to its resources, establishing a record of consistent and orderly progress. There have been no pyrotechnics, no violent fluctuations, no alternating seasons of feast and famine, such as have marked the course of many other industries and which have been given widespread publicity. It is this quality of inherent stability and the absence of headline news features that for a long time led the investing public to overlook the merits of gas company securities; and yet, logically enough, it is this very quality which, once recognized —as it has of late come to be—constitutes their chief attraction for the conservative investor.

The days of comparative isolation for the industry are over. It has stepped forth to take the place that rightfully belongs to it by virtue of its importance as a great agency of public service, supplying a commodity that is essential to the health, comfort and well-being of millions of our people. If it ever did hide its light under a bushel, that is no longer true. Today it is telling its story to the public and the public is responding with many evidences of interest and

From the Bankers Magazine.

approval. Few industries have such a wealth of material to draw upon and few can match it in the element of human appeal, for it is based upon service to that most vital and cherished institution —the home.

It should be understood that this article refers to manufactured or artificial gas.

INCREASED INDUSTRIAL CONSUMPTION

Sales have more than doubled in the past eleven years, reaching a total in 1925 of over 421,000,000,000 cubic feet for the country at large, as compared with 204,000,000,000 cubic feet in 1915. It is of more than passing interest to note that approximately 15 per cent of the total output is produced and consumed within the corporate limits of Greater New York, showing that this territory is one of the bulwarks of the gas industry of the United States. If the entire metropolitan area were included the percentage would be much greater.

Viewed in bulk, there is nothing about these figures that arrests the attention. True, they reflect a healthy growth, averaging about 10 per cent a year, and are a striking example of the stability referred to, all of which is gratifying but not remarkable. It is only when one examines their component parts that one uncovers some really interesting and significant facts.

Gas consumption is generally classified as domestic, industrial and commercial, the last two being frequently grouped together. At the beginning of the eleven-year period referred to, that is, in 1915, the amount of gas used as a fuel in the industries was but a small percentage of the total output, while in 1925 it is estimated that more than one-quarter of the total went to supply the industrial and commercial demand, which in the eleven years increased over 1000 per cent. In other words, of the 421,000,000,000 cubic feet of manufactured gas sold in 1925, 113,000,000,000 cubic feet were used for industrial and commercial purposes. This was for the industry as a whole. For certain companies located in manufacturing centers the percentage of industrial load was of course much greater. This is an all-the-year business which makes it very desirable for the gas company. The domestic load, which is still the backbone of the industry, continues to show a steady increase from year to year.

This remarkable evidence of the adaptability of gas to the uses of industry gives an idea of the present trend of development and indicates one of the directions in which great future expansion may be expected; for, notwithstanding the large gains already recorded, it is probable that as yet gas is carrying less than 10 per cent of the total industrial load available. The application of gas to the innumerable processes of industry opens up a field of practically unlimited dimensions and ushers in a new era in the history of gas utilization. It will be an era of huge installations and of production on a scale hitherto unknown. Given favorable rate and service conditions, the advantages of gas are so pronounced that its use as an industrial fuel may easily take the lead over all its other uses.

DEVELOPMENT IN HOUSE HEATING

One of the most outstanding recent developments is in the field of house heating. Wherever gas men meet it is one of the principal topics of discussion. The trade magazines are full of it. The public is showing keen interest and inquiries are coming in from all sides. One does not need to look very far ahead to see gas for house heating a large factor in the plans of every gas company. A sufficient number of installations have already been made to warrant the belief that the public will welcome this new application as rapidly as it can be made economically available.

Expert authority says that in the average household furnace a ton of raw coal yields about 12,000,000 heat units, while the same quantity burned in a modern

(Continued on page 552)

The Airplane in Utility Operation

Suggesting That Gas Companies Can Use Airplanes and Do It Profitably

By ADDISON W. LEE
General Superintendent, Louisville Gas and Electric Company

WE believe to the Louisville Gas and Electric Company goes the honor of being the first public utility to own and operate its own airplane.

The experiment conducted during the past two years to determine the practicability of aerial surveying has pointed to the following conclusions:

Addison W. Lee

First—A property the size of Louisville, or larger, can afford to own its own plane and equipment for aerial surveys.

Second—Aerial surveys of reasonable accuracy can be made far more cheaply than ordinary surveys.

Third—Precise survey work can be done aerially at about the same cost as with ordinary methods, but the ordinary survey will include only a small fraction of the area included in the aerial survey.

Fourth—Aerial surveys require only a fraction of the time necessary for ordinary surveys.

Fifth—The greatest value of the airplane lies either in mapping large areas or surveying rights-of-way for transmission lines, pipe lines, et cetera. Airplane work is expensive when the property to be detailed is only a city block, a plant site, et cetera.

Sixth—Engineers are, as a rule, prejudiced against the use of aerial maps or plans, because they have been familiar with outline drawings marked with symbols. In much the same way the ordinary layman is prejudiced against the conventional map, because the lines and symbols are unfamiliar to him. With continued use the engineer becomes familiar with the appearance of objects on an air map and becomes enthusiastic as to its value.

An expression has been coined that sums up briefly the real value in an air-map: "The more you look, the more you see."

There are two types of aerial photographs —oblique and vertical. Obliques are pictures that show perspective and are taken over the side of the plane.

Verticals are taken through the bottom of the plane looking straight down. When a series of these are assembled, they form what we call a mosaic map.

In making a mosaic map it is very necessary to make all the preparations in advance. First, it is necessary to select the scale at which the map is to be taken, as this will determine the altitude at which the plane is flown. With our camera, the ratio of scale to altitude is one to twelve. Thus, in the City of Louisville map the scale is 800 feet and it was taken from an altitude of 9600 feet. We then figure up the number of exposures to take, allowing fifty per cent overlap in the direction of the flight and fifty per cent sidelap between strips.

After obtaining the film, which is es-

pecially prepared and must be kept on ice until used, the pilot watches the weather and waits until the barometer has reached the crest of high. It is necessary that photographing be done on an absolutely clear day as some of the earth would be obscured if we passed over a cloud and a large dark place would show in the picture if a shadow were photographed.

The ship is tuned up and kept in readiness as the real good photographic days are few and far between. Finally, we get a good day and take off, after putting on our fur-lined flying suits, sheepskin moccasins and other Arctic-like clothes, as the temperature at 9600 feet is about 25 degrees below that prevailing at the surface. With our ship it takes a little over an hour to climb to this altitude.

We then fly back and forth over the city in strips almost a mile wide. A finder is used, somewhat similar to that used in an ordinary kodak, so that it is possible to space the pictures and to check the drift of the ship. After taking the pictures we descend gradually because of the difference in atmospheric pressure. If the descent is too rapid, it causes a roaring in the ears and a generally unpleasant feeling.

The films are then developed and the pictures printed. The scale is determined by checking several of the pictures and obtaining an average. As the sewer commission map of 1906 was the most ac-

Large aerial map of Louisville. This mosaic map contains 428 separate photographs. Mounted and framed, it is twelve feet long and eleven feet wide

curate map of the city, it is used for control. In case there are existing maps of the area surveyed, the control can be made by using different photos of the same obects for triangulation.

The separate pictures are cut with a razor blade along boundaries and breaks in the pictures and mounted in their proper positions. There are, in all, 428 pictures in the city map. After it has been assembled, this mosaic map is rephotographed to any scale desired.

The sections are mounted on linen and indexed for convenience in handling and are bound in an atlas or else mounted on a large frame.

Since the readers of this magazine will probably be more interested in actual results obtained than in propaganda for the use of aerial maps, we will content ourselves with giving only the following condensed list of the uses to which the Louisville plane has been put:

1. Gas transmission lines, both preliminary and final surveys. Several vital rights-of-way have been secured by giving farmers enlarged photographs of their farms.

2. City map of Louisville. This map is used for laying out extensions for services, both gas and electric. The houses on each block can be counted and classified as to probable revenue, allowing extensions to be made much more intelligently. The Louisville map has already been used as an aid in locating city schools and in work of the city planning commission. The sewer commission, Cumberland Telephone and Telegraph Company, Louisville Railway Company and some four or five others have requested copies.

3. Last, but not least, the maps have been used for advertising. Probably nothing the Company has done has caused so much favorable comment or such general interest as its use of a plane.

In addition to the maps, some 250 "oblique" photographs have been taken of all main industries, public buildings, parks, et cetera, in the city. The call for copies of these has been, and is, almost continuous. Where such a photograph is to be used in a way that will benefit a customer of the City of Louisville, copies are given free of charge; where a photograph is to be used for private purposes only, a charge of from $10 to $50 for the first copy is made. All photographs are protected by copyright.

A striking example of what the airplane can do is noted in a rush order which recently came to the engineering department, requesting a completely detailed map of Camp Zachary Taylor for immediate delivery. It was very necessary to show every house and building on the tract, and the map had to be on a 200-foot scale. The tract covers approximately one square mile and is very rough and rolling in spots. A quick job would have been practically impossible, using ordinary methods of surveying. Using the plane, however, the area was photographed Wednesday, April 14; the developing and printing was finished Friday, April 16; a mosaic map was made Saturday, April 17, and the finished map in complete detail was given to the management at nine o'clock Monday morning, April 19.

Only after much discussion, and with fear and trembling, was a decision finally reached early in 1924 to try the experiment of actually owning and using a plane. A real map of the city was desired and several long rights-of-way were contemplated that year. Attempts were made to secure commercial photographers to make the surveys, but the prices quoted seemed much too high.

The equipment purchased consisted of a Lincoln-Standard airplane equipped with a 180-horsepower Hispano-Suiza motor. A K-3 Eastman camera of the non-automatic type was fitted in the ship, by company men, with the necessary supports for vertical and oblique work.

The plane cost $3,647.54 and the camera $758.39. A lens for enlarging was bought at a cost of about $200. A dark room was partitioned off in the basement

Airplane view of the business district of Louisville

of the main office and homemade equipment was installed.

A pilot and a mechanic, each with special training, were employed and to them, W. S. Park and Glen Smith, goes much of the credit for the success of the aerial work. When not on aerial work, these men, with their general training, fit in very nicely in the engineering department of the Company.

Up to the first of January, 1926, the following surveys were completed:

Territory	Scale—Ft to Inch	Sq. Miles
City of Louisville, Kentucky	800′	87.2
City of Madison, Indiana	500′	14.0
Meade County—lease maps	800′	15.0
Falls of Ohio—preliminary hydro	600′	4.5
Falls of Ohio—preliminary hydro	200′	4.5
Seventh and Ormsby—preliminary hydro	200′	1.5
		126.7

		Lineal Miles
High Tension Belt Line—preliminary survey	800′	4.0
Camp Knox High Tension Line	500′	10.0
Indiana Natural Gas Pipe Line	800′	20.0
Salt River Basin—preliminary hydro survey	600′	19.5
Ohio River—above falls	400′	11.5
		65.0

The entire cost of all the surveys, equipment, et cetera, as taken from the books of the company, is as follows:

Original cost of plane	$3647.54
Original cost of camera	758.39
Amount spent to date operating plane, including all supplies, maintenance, pilots and mechanics, etc.	4936.36
Amount spent to date for films, chemicals, dark room equipment, labor for developing, printing, etc.	3242.11
Total expense on aerial surveys and equipment	$12,584.40

(Continued on page 556)

The New Era of the Gas Industry

Contemporary Leaders Are Laying a Firm Foundation So That The Future Will Be Secure

By E. B. LUCE

Educational Director, Consolidated Gas, Electric Light and Power Company of Baltimore

"A New Gas Engineering Department in one of America's Great Universities" was the title of an article in the AMERICAN GAS ASSOCIATION MONTHLY for April, which described the opportunities now made available for research and study at The Johns Hopkins University, Baltimore, Maryland.

The present leaders in the gas field are laying a firm foundation for "The New Era of the Gas Industry" and have created the means for preparing leaders for the future.

The value of education is frequently appreciated only in a general way. Everyone recognizes the supreme necessity of education, and yet seldom takes the trouble to determine the details of the purpose of this training and whether or not the means employed for the attainment of the object are correct.

Education and training are indispensable. Students of today will become the leaders of tomorrow. A young man attending technical school now is likely to be a cadet engineer next year and plant manager ten years from now.

The work being carried on by the Gas Engineering Department at The Johns Hopkins University is one that has a bearing on the future of the entire industry.

Trained engineers are needed in the gas industry. Where are they not needed in any progressive business enterprise today? A problem the gas industry has to face is to create a desire in the student to prepare himself for a career in the gas business. Then he must be able to see the facts and be inspired with the possibilities in this field so that he will decide of his own volition that the gas business offers the best chance for him to succeed. The field is not crowded. The need for leaders is imperative. Opportunity for preparation has been provided. One of the incentives that will lead a student to prepare for and enter a certain business is the success of recent graduates. A freshman at Johns Hopkins, before the establishment of the gas engineering course, may have reasoned: "There's Jim Jones. He's an electrical engineer; gets a salary of $6000 per year. Guess I'll be an electrical engineer." Now, opportunities in the gas field, equal or greater than those in the electrical field, are offered. It can be seen that the duty of the gas course concerns more than the instruction in the usual subjects—the students must be fired with an ambition to enter the gas industry and to do big things in it, and receive the rewards in salary which are sure to follow. The graduates of the Johns Hopkins Gas Engineering course will give to the industry intelligent and trained leadership, and will fully justify the support given in scholarships and endowments.

The department of Gas Engineering at Johns Hopkins was made possible by the initiative and generosity of the Southern Gas Association. The department derives its support partly from the industry and is devoted entirely to training and research work in this field. It is a well established fact that the cost of a college course is not covered by the tuition charged by the college. This necessitates gifts, endowments, etc., to the college in order that it may continue to function.

The success of the gas course at Johns Hopkins, through the support it is given, is assured, but greater achievements may be expected from the increased support which the industry will give. Johns Hopkins is the first American university to

The 16 students enrolled in the course in Gas Engineering

establish a chair in gas engineering and the first to rank this work co-equal with electrical engineering, mechanical engineering, chemical engineering and civil engineering. The University, therefore, deserves the co-operation and financial backing of the gas industry.

The course at Johns Hopkins now has an enrollment of sixteen full time day and twenty-six evening students. Ten of these young men in the day course hold scholarships that have been offered as follows:

Consolidated Gas Electric Light and Power Company of Baltimore ...	4
C. H. Geist Company, Philadelphia	2
Washington Gas Light Company ..	1
Southern Gas and Power Corporation, Philadelphia	1
Tampa Gas Company, Tampa	1
Mobile Gas Light Company, Mobile	1

These scholarships prove that the value of the course is appreciated by these various donors. The scholarships are all awarded on a competitive basis, thus assuring students of high attainments. It is felt that out of this movement there will come leaders trained and prepared to initiate the new era of the gas industry and that new knowledge of value to the entire industry will also be revealed.

Those gas companies interested in the practical application of public relations will find much of interest in this specific phase of the Gas Engineering Course at The Johns Hopkins University. The scholarships awarded to the students are given by those companies sufficiently interested to provide the means. The student is not the only one who gains by this, as the company reaps the benefits of the favorable public reaction. Today everyone is interested in college and university training, and everyone appreciates all that is done to further and to make more effective this training.

Recently Charles M. Cohn, vice-president, Consolidated Gas Electric Light and Power Company, wrote to 440 gas companies, asking them to consider the possibility of awarding scholarships to students. The letter is reproduced on this page. In making this appeal Mr. Cohn realized that he was treading on virgin ground. However, the results to date have shown that many companies are interested in furthering the work of the course. A list of all the scholarships to be awarded for the coming collegiate year will appear in the October issue.

Training tomorrow's leaders is a task of great importance. If the gas industry is to prosper and grow, it must be through recurrent waves of trained men

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Dear Sir:

The Johns Hopkins University, Baltimore, Maryland, is offering an unusual opportunity to young men who desire to prepare for careers in the gas industry. Research work of great value to the whole industry is being done in connection with these courses.

The Gas Engineering Department at Hopkins was established in 1924 under the direction of Dr. Wilbert J. Huff, Ph.D. (Yale 1917), an able and experienced gas engineer. these courses are the only co-ordinated courses in this country, leading to degrees in Gas Engineering.

Last year scholarships were given to ambitious young men by the following companies:

Consolidated Gas Electric Light and Power Company of Baltimore	4
The C. H. Geist Company	2
The Washington Gas Light Company	1
The Tampa Gas Company	1
The Mobile Gas Company	1
The Southern Gas and Power Corporation	1

Recently Mr. Walter W. Whetstone, on behalf of The Southern Gas and Power Corporation, announced that his company would give *four* scholarships instead of one.

In order to broaden the scope and increase enrollments in these courses, will your company give serious consideration to the offering of one or more scholarships in the Hopkins Gas Engineering Course, under the terms of which a young man of your own selection may enter in the Fall of this year?

It will be a pleasure to furnish any additional information you may desire.

Thanking you for your early consideration and awaiting a prompt reply, I am

Yours very sincerely,

CHARLES M. COHN,
Vice President

Students enrolled in the night course at Johns Hopkins. There are 26 enrolled in this course

seeking the helm, men who are not content merely to "carry on" but men who will advance sanely and progressively, seeking new uses for gas, improving manufacturing, distributing and marketing methods and processes along economic and scientific lines.

The Johns Hopkins University, Baltimore, Maryland, is offering the facilities for gas research and instruction, destined to contribute to the improvement and advancement of present theory and practice, the certain benefits of which no man can fully measure or accurately forecast.

Utility Speakers For Ohio Schools

EMPHASIZING the fact that school students, and the public generally, cannot be too well informed on public utility matters, Vernon M. Riegel, State Superintendent of Public Instruction for Ohio, has sent a letter to all school superintendents in the state suggesting that they arrange for utility speakers to address student bodies. This letter was sent as a result of a conference which Fred J. Bollmeyer, Director of the Ohio Committee on Public Utility Information, had with State Superintendent Riegel. Already a number of school talks have been arranged through the Ohio Committee as a result. A copy of the letter follows:

"Dear Superintendent:

"It is always helpful to be able to give students in the latter years of school authoritative information about forces and factors which condition our economic life. There is woeful ignorance as to the functioning structure of modern industrial society. In this industrial society our public utilities hold a somewhat unique position.

"The public cannot be too well informed on public utility matters and needs information on all phases of the problems involved. There has been organized an Ohio Committee on Public Utility Information for the purpose of disseminating information from the utilities' standpoint about four of these industries: electric light and power, gas, telephone, and electric railways.

"The Department of Education does not want to thrust speakers upon the public schools. It does, however, want the schools to know that this Committee stands ready to send speakers—men and women experienced in public utility work—to schools upon request. There would, of course, be no expense attached to these addresses before student bodies."

Miss Margaret F. Eurich is the first woman to graduate in gas engineering at Leeds University, England. She has been awarded second Class B. Sc. Honors.

Three-Part Rate Is Success in Topeka

A Description of the Methods Employed in Applying the Rate and the Ensuing Results

By FRED KARR
Director of Public Relations, The Gas Service Co.

THE Capital Gas & Electric Company applied for the general application of the reservation rate to Topeka in the spring of 1924. In the hearing before the Commission the company met the usual objections of some of the city officials. The company considered it more advisable to attempt to sell the reservation rate rather than overcome the opposition at this time. Accordingly, it secured the permission of the Public Service Commission to offer 200 customers the opportunity to try out the reservation rate. These customers were accorded this privilege in February, 1925.

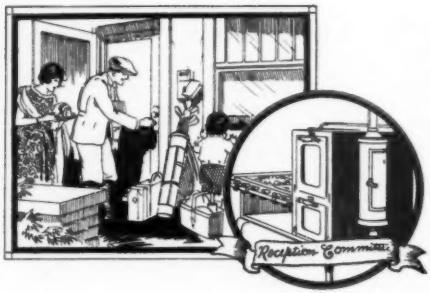
Since this time the company has applied to the Commission and has been granted the opportunity of placing 900 additional customers under the rate. This trial is working out very satisfactorily in teaching the consumers the advantage of the rate. Nothing carries as much weight with either the Commission or the average consumer as the avowed satisfaction of a customer who acknowledges that his experience with the rate has been very satisfactory, and who supports his testimony with facts and figures to demonstrate beyond the question of a doubt that he has been rendered superior service at a less price per thousand than he would have obtained under the old rate.

On June 10 of this year a hearing was held before the Commission in which the company asked for a general application of the reservation rate. The final hearing has been set down for this fall. In the June hearing, however, a great deal of testimony was taken and witnesses were heard.

The present rate in Topeka is a 75-cent per month customer charge and an 80-cent per thousand cubic feet metered commodity charge. The reservation rate, for which the company is asking the Commission and which the limited number of customers have accepted as a trial rate, is 75 cents per month customer charge, 32 cents per foot per hour of maximum requirement per year and 40 cents per thousand cubic feet metered gas charge.

If the company were permitted to earn an amount sufficient for depreciation and a fair return upon the fair value of the property, based upon the amount of gas

Will the Three-Part Rate Help in Making the All-Gas Home as Popular as It Should Be?

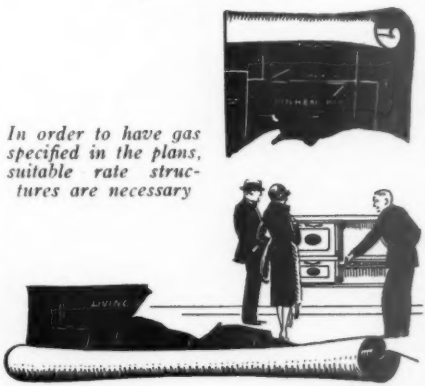


The Readiness of Gas to Serve Is Keenly Felt in Cases Like This.

used by the customers in 1925, it would be compelled to charge on a flat rate basis, i.e., a rate which takes into consideration merely the price per thousand as metered on the customer's premises, a rate per thousand of $1.22. If the company were to request the Commission to charge $1.22 as a rate for gas, they might defeat their own purpose, because such a high rate per thousand would undoubtedly cut down the volume of consumption, and because, without question, the company could not sell the volume of gas under this rate that it sold in 1925. This should convince any fair-minded person that a flat rate method of charging for gas works against both the interest of the customer and the gas company. The gas company is not applying for an increase in rates at this time. It is asking for permission to install the reservation rate. The company's experience with the reservation rate in other communities and the year's trial of this rate in Topeka, with 191 customers, demonstrates conclusively that such a rate is a boon to any community.

An analysis of 191 customers in Topeka who have been using gas under the reservation rate brings out the following illuminating facts. These customers are a fair cross-section of the gas consumers of Topeka both in regard to vocational classification, the annual consumption, from the smallest to the largest consumer, and the number of cubic feet requirement per hour. Of these 191 customers, the laboring class totaled 34 per cent, or over one-third of the total number of customers. The average users, or those requiring a reservation of 60 cubic feet per hour or less made up 75 per cent of the number of customers. The average price per thousand of these 191 customers was 63 cents. The average price per thousand at present in Topeka is 97½ cents. These 191 customers, in a year's time, consumed 27,665 thousand cubic feet. The average consumption per customer per year in Topeka today is less than 50,000 cubic feet. At this rate, 191 customers would consume during the year, 9550 thousand cubic feet. You can readily see how this reservation rate has increased the volume of gas consumed and brought down the average price per thousand of these 191 customers. The gas company demonstrated what this rate would do with these customers and knows that it will be of the same relative benefit when it is applied to all the customers served in Topeka. In other communities where the rate has been applied to all customers, the same advantageous results have been obtained as by the 191 customers who have tried it out in Topeka. The average price per thousand cubic feet for all customers in Ottawa, Kansas, where this rate has been in operation since 1919, is 70 cents, which is a considerable contrast to the average price at Topeka today, of 97½ cents.

(Continued on page 550)



In order to have gas specified in the plans, suitable rate structures are necessary

Methods of Surveying the Prospective Market for House Heating

By JOHN H. HARTOG
Portland Gas & Coke Co., Portland, Ore.

IN surveying a city for the purpose of estimating its potentialities for house heating with gas, three principal factors are of basic importance and should guide one's considerations in order to arrive at sound conclusions: to wit—climatic conditions, fuel supply, gas rate.

The gas rate does not necessarily have to be determined from the fuel supply and cost for it might be that the rate necessary to charge for gas would be so low as to make the survey of ruling temperatures and fuel costs superfluous. Situations are thinkable where gas could not be profitably produced at a competitive figure.

Omitting such possibilities, the first thing to inquire into would be the ruling temperature and this one would have to study somewhat more in detail than by simply accepting official temperature charts which might be decidedly misleading.

It would be well therefore to study the valuable data given in Chapter III of the House Heating book of the American Gas Association.

The points to find out about are:

How cold does it get? How many hours does the cold last? How much humidity is in the atmosphere? Is there much snow, or none? Are there howling winds or slight disturbances? Is there rain and from which direction? The mean temperature has very little to do with all these and yet it is easier to heat a house with a layer of snow filling every crack and crevice at a low outside temperature, than to heat a similar house at a much higher outside degree but with a biting wind blowing through the walls.

Having ascertained from reliable data, and, if possible, from personal knowledge of the situation, just how much heat is to be supplied, the next question is competition—the competition of solid fuel.

What are people using to heat their homes? And what are the prevailing prices? Even though fuel is abundant and cheap, as wood is in this part of the world, that does not mean that gas cannot compete, as witness the fact that Portland, with a superabundance of wood on every hand, led out as the pioneer seven years ago in house heating. Fortunately, the furnaces in which wood is burned are so wasteful and the gas furnace so efficient, if properly constructed and scientifically installed, that the cheapness of wood was not as great an obstacle as otherwise might have been the case.

Having ascertained the climatic data, estimated the required heat units and secured the average solid fuel heating bills for specific houses, it is a simple problem in arithmetic to divide the one into the other and find what gas would have to be sold at to compete.

By competing, one should bear in mind that the total gas bill need not be the same in dollars and cents as the previous fuel bill. Not at all. It is very easy to prove by advertising and other modes of publicity how much more gas heating is worth than stoking. That, however, is a question of propaganda and selling, and therefore does not belong in this discussion.

Having ascertained the rate necessary to secure at least a share of the house heating business, the next step is to find out whether that rate can profitably be made and upon the degree to which this is possible will depend the amount of business that can reasonably be expected.

Finally, it is interesting and profitable

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Industrial Gas School for Salesmen to Be Offered Again This Year

THE industrial gas salesman's course which was held last year under the auspices of the Industrial Gas Section of the American Gas Association will be repeated this year. The course will be held at the Consolidated Gas Company, 130 East 15th St., New York, from September 27 to October 9.

Due to the success of the course last year and the growing importance of education for the promotion of gas in industry, the course this year will offer those attending more complete and condensed instruction than has ever before been given.

This year the economic and sales aspect of the industrial business will be stressed, rather than the technical. It was felt by the committee in charge that the technical phase is well-covered by courses such as those conducted at the Massachusetts Institute of Technology and the University of Illinois.

In addition to lectures and discussions, laboratory instruction will be given by capable teachers, and inspection trips will be made to outstanding and interesting industrial installations in the nearby territory.

Among the subjects to be treated, with special emphasis always placed on the economic and sales aspect, are:

Industrial heat requirements, types of ovens and furnaces, temperature control, combustion systems, gas and its relation to competitive fuels, low-temperature oven application, heat treatment of steel, non-ferrous metals, gas-fired steam boilers, plant surveys, elements of salesmanship, and industrial gas salesmanship.

J. P. Leinroth, Public Service Electric and Gas Company, Newark, N. J., as chairman of the sub-committee on education of salesmen, has charge of the course. In commenting on the scope of the course for this year, Mr. Leinroth says, "Last year the industrial school was a positive success, and this year it should be even more so, for the result will be cumulative of the two years. The committee has carefully selected the subjects to be presented, and has been able to secure speakers who will be able to present their topics capably and with authority. The splendid spirit of cooperation, shown by those we asked to devote time and energy in the preparation of subjects to be presented by the students, is indeed commendable and is an index that the course will be successful."

Announcement of the speakers and the subjects to be presented by them will be made shortly.

The dates of the school this year were picked so that men from all over the country could attend, at the same time making it possible for them to go to Atlantic City for the Eighth Annual Convention of the American Gas Association, which will be held on the Million Dollar Pier October 11-15.

Write Mr. Leinroth immediately and let him know how many men from your company will take advantage of this opportunity to learn officially the latest data on industrial gas promotion. He may be addressed at the Public Service Electric and Gas Company, Newark, N. J.

U. G. I. Board Recommends Dividend

AFTER adjournment of the meeting of the board of directors of the United Gas Improvement Company, on July 22, Samuel T. Bodine, president, made the following announcement:

"The Board of Directors today decided to recommend to the stockholders that $20,365,300 of the undivided profits of the Company be distributed as of November 15, 1926, in the shape of a stock dividend of 25 per cent to stockholders of record at the close of business October 15, 1926."

A Competition—For Every Gas Man

The Gas Man's Own "Gas Home" Is One of the Best Advertisements to Use in Promoting Gas Sales

SINCE "practice what you preach," and "people who live in glass houses should not throw stones," are proverbs that have not lost any of their pungency in the long years of their existence, a great many gas men believe that a strict application of the principle involved in these quotations is needed in the gas industry to stimulate sales of gas.

Many gas men live in homes like this one. The question is: "Is it adequately equipped for gas service?" Read the announcement of the competition and send in the material you have.

These gas men feel that they can tell prospects of the advantages and comfort of adequate gas service, and tell them more convincingly, if they can say, "Look, my home is an example. Does my wife sweat over a coal range in the kitchen? Does she have to carry coal upstairs and take out the ashes? Do my kiddies dress in cold rooms? Not on your life. I'm sold on gas. My wife cooks on an all-white enamelled range that has oven heat control. My kiddies dress in a room that is kept at 70 degrees from 6 a.m. to 10 p.m. *automatically*," etc., etc.

If the gas man practices what he preaches, and if he doesn't live in a glass house and persist in throwing rocks at others, by not having a gas-equipped home and by trying to sell gas to others, then he has made a long step toward the ultimate goal.

In the movement to stimulate interest in the gas home for every gas man, the MONTHLY realizes that it is not the first in the field. Already one of the leading national gas-trade papers has made a commendable start, and with the idea of supplementing this, rather than competing with it, the MONTHLY announces an official competition to determine just how many gas men have their own homes adequately equipped for gas service.

The competition will have no prizes. The rewards will be the stimulation of gas sales. However, one dollar will be paid for all photographs that are printed in the MONTHLY. In this way the MONTHLY will defray any expense that the contestants may go to in having suitable photographs taken.

The contest will last up to and including October 15, the last day of the Annual Convention. Announcement of the winners will be made in the November issue, and an interesting article composed of excerpts from letters received from the contestants, together with photographs, will appear in the December issue. (Photographs and letters should be mailed to The Editor, The American Gas Association Monthly, 342 Madison Ave., New York, N. Y.) Provision will also be made to receive them at the A. G. A. Booth at Atlantic City.

The size of the house will not be taken into consideration in any case.

Send a letter and photographs—that's all. The following are the gas appliances that will be given consideration: Range, water heater, incinerator, refrigerator,

house heating boiler, laundry stove, laundry dryer, garage heater, space and portable heaters. (The refrigerator is included, because a few machines are in use at the present time.)

In sending photographs, the contestants should send one of the exterior, one of the kitchen, one or more of the basement, and any others that may be necessary.

You don't have to have an ALL gas home—the judges will be on the watch for the ADEQUATELY GAS EQUIPPED HOME.

Swamp us with the material—send it now! Photographs and a letter!

The judges will be announced later.

Babson Sees Remarkable Future For Gas

IN spite of the phenomenal progress made heretofore by the gas companies in expanding their business, the full possibilities of development have rarely been started, according to Roger W. Babson, in a recent release to his clients. Discounting the idea that since the advent of electricity the use of gas has declined, he says that because of the development of the industrial and house heating fields, the future will be little short of spectacular.

"The reason for this tremendous growth in the use of gas is not hard to understand," says Mr. Babson. "Gas heat, like electrical heat, is a clean, controllable and convenient heat. As compared with coal its expense eliminates the expense and nuisances of coal storage and handling and ash removal. At rates prevalent during the past it has been more expensive than coal but not as expensive as electricity. On an equivalent heat basis, gas is said to be about one-sixth as expensive as electricity. I understand that an efficient gas manufacturing system extracts up to 85 per cent of the possible heat in coal while in the generation of electricity not more than 15 per cent is made available.

"In view of the fact that gas companies will continue to enlarge their industrial heating load," Mr. Babson goes on, "they may be expected to enter the field of house heating on a big scale wherever rate and load conditions make such enterprise worth while. It is only reasonable to anticipate further the large annual demands for new capital. These securities will probably find a good market for gas companies are showing good earnings and they have the good will of the public. With an expansion in their market ahead of them, further economics possible through more efficient burning of fuels, and but little prospect of political interference, it is difficult to picture anything but a profitable future for well-managed, well-located companies."

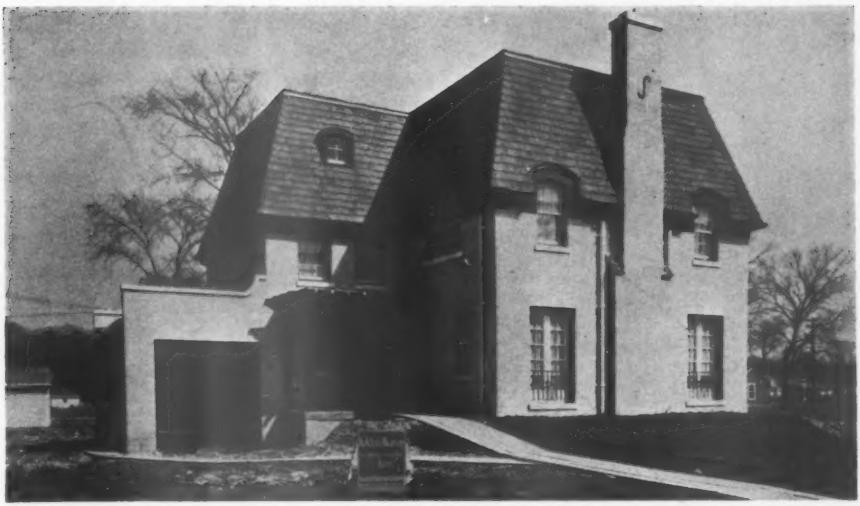
Utilities Hire Few Child Laborers

THE public service companies of the United States employ a smaller percentage of child labor than any other group, including the agricultural, manufacturing, etc. These figures are brought out in a series of charts recently prepared for the National Association of Manufacturers.

The most significant feature of these charts is that of all those engaged in public service, there are fewer children between the ages of ten and fifteen years than those of the same age who are engaged in professional service.

In public service the proportion of children of this age is .15 per cent of the total number employed. The professional service group is next with .16 per cent, while the manufacturing and mechanical industries have 1.45 per cent. This compares with the 2.55 per cent of all industries and occupations combined.

Cool treatment of a hot subject by The Peoples Gas Light and Coke Company.



1: A house that gives the appearance of comfort, as this one does, needs gas house heating

What Constitutes a Blue Star Home?

Suggestions That Will Help Promote the Sales of Gas By the Model Home Method

ONE of the most important steps in putting the Blue Star Plan into operation in any locality is the determination of what uses of gas shall be required in a home in order to merit the Blue Star Poster during construction and the Blue Start Certificate upon its completion and occupancy.

In the exhibition Blue Star Home itself, it is usually desirable to exhibit just as complete an installation of gas appliances as can be arranged for, in order that visitors to the home may get a complete picture of the degree to which gas caters to the fundamental needs of the home.

For application to the subsequent Blue Star Homes the requirements should be drawn up very carefully in the light of local conditions. It is of course impracticable to set up a single standard of modern gas service to be applied alike in all parts of the country. Differences in rates, population, location, and other factors may make it necessary to adjust the standard to the needs of the community under consideration.

As this is the crux of the entire Plan, considerable care should be used in setting up the requirements. It is suggested that a preliminary survey should be made of the equipment installed in twenty-five or more newly constructed homes. The standard set should exceed the average installation found in these homes, but should, of course, not be so high as to be impracticable. The intent should be to arrive at a standard higher than the average but which will at the same time bear the proper relation to the total cost of the house. These requirements are set up so as to be flexible to some extent for houses of various sizes in the same community. They are distributed in a folder enclosed with the consumer booklet which invites the public to inspect the demonstration home and which is descriptive of the comforts and conveniences of modern gas service in the home. The real aim should

2: The insulated home and gas house heating are synonymous

be to show the man of moderate means that his home does not need to be a mansion in order for it to include these comforts.

In setting up requirements it is not necessary to limit the piping and outlets to those necessary to cover the appliances required, but, on the other hand, additional outlets may be specified to facilitate the later sale of certain appliances which it may be felt inadvisable to include in the original requirements. This might refer, for instance, to outlets in the basement for more complete laundry requirements or to outlets in various rooms of the home for later installation of additional room heaters.

THE PLAN AT LOWELL

This feature of the requirements has been utilized advantageously in the Blue Star Home now under construction at Lowell, Mass., which will be exhibited under the sponsorship of the Lowell Gas Light Company sometime during the latter part of October. The requirements specify that the home shall carry several outlets in addition to those necessary to supply the appliances covered in the requirements. The exhibition home as well as those following will carry a modern gas range, automatic water heater, fireplace radiant heater and gas-fired house heating boiler.

The exhibition house is being thoroughly insulated to facilitate gas house heating under the most advantageous conditions. It is one of six which the local reality company will build to similiar specifications, and is a six room Colonial type house which will sell for about $9,500, completely equipped and insulated.

FOR COMBINATION COMPANIES

A number of the companies now engaged in putting the Blue Star Plan into operation are combination companies supplying both gas and electricity. They desire to make the exhibition home an example of the comforts of both gas and electricity in the home. Among these is the Public Service Company of Northern Illinois now engaged in the construction of such a home at Evanston, Ill., for exhibition withing the next few months.

Referring to gas appliances to be included in the home, this company said in a recent letter:

"As our company is developing the central station idea in both the gas and electric fields, it has been our experience, that very close co-operation is necessary between the gas and electric industries in developing a home not only completely equipped with gas burning equipment, but harmoniously arranged for correct lighting and plenty of outlets for electrical appliances.

"We have found it highly essential for

3: The kitchen of a model home should be a model kitchen

the furtherance of our business to co-operate with architects, builders, heating contractors, building material companies, wiring contractors and manufacturers, as the harmonious home is only realized by bringing together the combination of the forces I mention.

"Photograph No. 1 pictures a very comfortable home which you will notice advertises thoroughly to any individual approaching the premises that 'Gas for heating is being installed here by the Public Service Company of Northern Illinois.'

"A house, to be modern, must be built so thoroughly insulated, that it is warm in winter and cool in summer, so you will notice that our typical modern home has been insulated and we did not hesitate to advertise this very thoroughly as shown in photograph No. 2. We also arranged, when this home was opened for inspection, to have a representative from the insulation company display advertising matter relating to insulation on a table, which shows at the extreme right of the picture. It is highly important that we bring to the attention of the customer building the modern home the fact that a thoroughly insulated home will show decided economies in heat saving, and stress the fact that when burning gas, in wholesale quantities, great care should be exercised in retaining the maximum amount of heat within the building walls after it has been released within the living rooms of the house. The insulation manufacturer and distributor is naturally only too interested in doing everything possible to aid us, and you will find his ready co-operation when he is asked to tell his story to the visitors of the modern home.

4: Another part of the basement

5: The dining room

"It is our endeavor to co-operate to the fullest extent with the Master Steam Fitters' Association and an examination of photograph No. 2 will show we are not at all reticent when it comes to conveying our ideas on this subject to the public. If we work to the end that all of our gas installations are properly installed and make it a point to see that the central station company sells the boiler to the heating contractor in the case of all new homes, it will be found that the Association will express their approval by recommending the installation of gas-fired boilers for the company's engineers to follow up.

"It is highly important that we recognize the fact, when selling the gas boiler, that we have taken away from the customer one means of disposing of waste paper and refuse, and it therefore becomes almost obligatory that we urge the sale of a satisfactory incinerator, and you will note that such an appliance was arranged for, as pictured in photograph No. 2. You will notice that the incinerator is suitably equipped with a remote control which produces a very satisfactory, automatic appliance.

"So far we have dealt entirely with the gas equipment of the home but by referring to photograph No. 3 it becomes apparent that we must now deal with both gas and electricity, and you will readily understand why we are so emphatic about the necessity for co-operation between the gas and electric interests.

"No. 3 shows very clearly that the only satisfactory method to be considered for cooking, where both gas and electricity are available, is the modern gas range, which is properly flued and vented to the chimney.

"The icebox shown in photograph No. 3 is electrically operated and it is very apparent to all of us that the gas-operated refrigerator is very probably in the same place occupied by the electric machine five years ago. We place great hopes on the present experimental work being conducted by manufacturers of the gas-fired refrigerator, and it is clear to any reasoning individual that there is coming a time when gas refrigerators will no doubt have a tremendous sale, possibly even greater than the electric machine, in territories where both gas and electricity are available.

"Photograph No. 4 shows that the modern home is equipped with an automatic storage water heating system, and also shows that when this is installed near the stationary tubs considerable economy can be effected.

"We have been impartial in that we have installed an all-electric washing machine, as we do not make a practice of selling washing machines equipped with gas burners at the present time. It happened in the present instance that the customer preferred to use an all-electric ironing machine, but it is our policy to be impartial with respect to this particular appliance as we sell ironing machines operated with both gas and electricity, as well as ironing machines operated exclusively with electricity.

"Photograph No. 5 shows the dining-room.

"We feel that we have done a great deal of work along the lines of developing homes, but also feel that there is a great deal more to be done in perfecting this work."

Additional information on the operating features of the Blue Star Plan in various parts of the country will appear in an early issue of THE MONTHLY.

REGARDING REPRINTS

ONCE AGAIN we wish to remind our contributors and readers that reprints of any material published in the American Gas Association MONTHLY may be obtained in accordance with the following scale:

100 copies, 1 page	$2.00
Additional 100's	.40
100 copies, 2 pages	3.00
Additional 100's	.40
100 copies, 4 pages	7.00
Additional 100's	.75
100 copies, 8 pages	10.75
Additional 100's	1.05

These copies cover only actual printing costs. Reprints can be made according to this scale only if orders are received while material is still in type. Prompt action is, therefore, essential. Under any circumstances, permission of the author must be obtained before reprints can be made.

Japan to Learn of Gas House Heating

THE importation of a modern gas-fired house heating furnace into Japan proves that this Occidental country is rapidly adopting American methods and ways of living, according to M. Nagai, sales engineer, Toho Gas Company, Toho, Japan. The gas furnace is the latest American-made comfort-giving device.

Mr. Nagai, who recently completed an extensive tour of this country, visiting gas plants and studying the customs and practices of American gas industry, took back with him a gas house heating boiler. This will be installed on the sales floor of his company, set up complete and operated for the benefit of the Japanese.

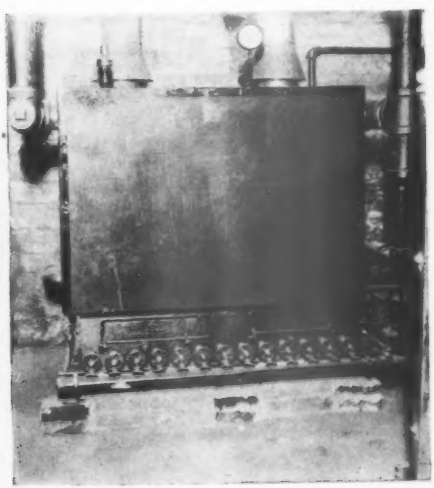
Plumbers and Steam Fitters of U. S. and Canada Heat Their Building with Gas

By G. C. CARNAHAN
Manager, Heating Section, Peoples Gas Stores, Inc.

THE Journeymen Plumbers and Steamfitters of the United States and Canada, when confronted with the problem of heating their headquarters building in Chicago, discussed the matter at a meeting of the members, and decided on gas.

One of the members suggested gas as a fuel, and as a result of the discussion on different fuels, gas was decided upon as the logical one. This decision, of course, was due to the knowledge of a great many of their members regardi the advantages of gas in the way of convenience, cleanliness and automatic operation which insures even temperatures.

The building is a large home of stone and brick construction. It has 1200 square feet of steam radiation installed. This, however, does not include the radiation from the uncovered flow and return lines which are to heat the basement. The gas boiler is designed for burning gas only, and is of ample size to take care of all the heating requirements on the premises.



Gas Heating Installation in the Plumbers and Steam Fitters Building.

CO-OPERATION

The installation was completed during February, 1926, and the estimate for cost of operation is $1000 per year. Since that time the gas consumption has indicated that the estimate is reliable.

Much can be said of the co-operation we receive from the steamfitters, which is now and has been a big avenue for the progress of gas-heating equipment. Our relations with them are very pleasant and because of the proved merits of gas as a fuel, their recommendations to their customers have been many.

Massachusetts Makes Utility Bonds Legal

THE initial list of public utility bonds designated by the Massachusetts Commissioner of Banks as legal investments for savings banks in the state omits several issues which appeared to qualify and which were recommended to the banks by bond houses following passage of the amendment by the last legislature. These houses had sold bonds to the banks with the proviso that they would be taken back if they did not appear on the official list.

It is expected that some of the bonds that failed to make the grade will be designated in a supplemental list when certain requirements have been complied with. Some were omitted because the companies had failed to answer the commissioner's questionnaire. No Pennsylvania utility bonds are included in the list.

The complete list follows.

Bronx Borough Gas Company, 1st 5s, 1938.
Brooklyn Edison Company.
Edison Electric Illuminating Company of Brooklyn, 1st cons. 4s, 1939.
Kings County Electric Light and Power 1st 5s, 1937.
Brooklyn Edison A 5s, 1949, and B 6s, 1940.
Central Maine Power 1st 5s, 1939; 1st and gen. A

7s, 1941; 1st and gen. B 6s, 1942; 1st and gen. C 5½s, 1949; and 1st and gen. D 5s, 1955.
Cleveland Elec. Ill. Co., 1st 5s, 1939.
Commonwealth Electric 1st 5s, 1943.
Commonwealth Edison 1st 5s, and 6s, 1943.
New Milford Power 1st 5s, 1932.
Connecticut Light and Power 1st and ref. A 7s, 1951, B 5½s, 1954, and 1st and ref. C 4½s, 1956.
Grand Rapids-Muskegon Power 1st 5s, 1931.
Ionia Gas 1st 6½s, 1944.
Jackson Gas 1st 5s, 1937.
Lansing Fuel and Gas 1st 5s, 1927.
Michigan Light 1st and ref. 5s, 1946.
Pontiac Light 1st 5s, 1927.
Consumers Power 1st lien and ref. 5s, 1936.
Kansas City Power and Light Company 1st "A" 5s, 1952.
Los Angeles Elec. Company 5s, 1928.
Los Angeles Gas and Elec. Company gen 5s, 1934.
Los Angeles G. and E. Corporation 1st and ref. 5s, 1939; gen. and ref. "B" and "C" 7s, 1931; gen. ref. "D", "G" and "H" 6s, 1942; gen. and ref. "E" 5½s, 1947; gen. and ref. "F" 5½s, 1943, and gen. and ref. "I" 5½s, 1949.
New York and Queens El. Lt. and Pwr. Company 1st cons. 5s, 1930.
Alliance Gas and Pwr. 1st 5s, 1932.
Ashland Gas and Elec. Lt. 1st 5s, 1929.
Massillon Gas and Elec. 1st 5s, 1956.
Richland Public Service 1st 5s, 1937.
Sandusky Gas and El. 1st 5s, 1929, and 1st ref. and imp. 5s, 1945.
Trumbull Public Service 1st 6s, 1929.
Ohio Pub. Serv. 1st mtge. and ref. "A" 7½s, 1946, and "B" 7s, 1947, and 1st mtge. and ref. "C" 6s, 1953, and "D" 5s, 1954.
San Diego Cons. G. and E. 1st 5s, 1939, 1st and ref. "A" 6s, 1939, and 1st and ref. "B" 5s and "C" 6s, 1947.
Western New York Utilities Company 1st 5s, 1946.

Three-Part Rate Is Success

(Continued from page 540)

A high price per thousand cubic feet of gas, on a flat rate, will undoubtedly cut down the volume of sales, and work a hardship on everyone who pays their gas bills. Under the reservation rate the customer is stimulated to use a greater volume of gas because, under the reservation or requirement, adequate for his needs, the more gas he uses the more he lowers his price per thousand. This rate enables the customer to take advantage of quantity purchase, thereby decreasing the price per unit directly in proportion to the amount of gas consumed, a condition impossible of attainment under a flat rate where the price per unit in any quantity is the same as the unit immediately preceding. The gas company expects to receive its compensation under this reservation rate from selling a larger volume of gas rather than from an increase in the price per thousand. It is able to accomplish this under the reservation rate without materially increasing operating expenses or adding physical investment in property necessary for gas distribution.

Thus, this form of rate structure permits the gas company to increase its load factor without materially increasing its cost of operation or its physical investment. By knowing in advance what the peak load will be the company is enabled to prepare economically and certainly for an uninterrupted and continuous service to its customers.

This form of rate structure also permits the customer to take advantage of quantity purchase and to bring down his rate per thousand cubic feet and assures him definitely of his requirements being served because he asked for a definite service; the aggregate of these services is known definitely by the company and preparations can be made to take care of this total requirement adequately and economically.

The table shows the results of the reservation rate and its comparison with the present rate in Topeka.

TWELVE MONTHS' AVERAGE

Item	M. Cu.ft.	Rate	Reservation Rate	Rate	Present Rate	Increase
			Per Customer			
Gas	12.33	.40	4.93	.80	9.86	R4.93
Reservation	75.83	8/3	2.02			2.02
Customer Chg.	192.5	.75	.75		.75	
TOTAL			7.07		10.61	R2.91
			Per M. Cu.ft.			
Gas	12.33		.40		.80	R .40
Reservation	75.83		.17			.17
Customer Chg.	192.5		.06		.06	
TOTAL			.63		.86	R .23

THE TIDE OF MEN AND AFFAIRS

MRS. ANNE DARE SPENCER, who has been connected with the Consolidated Gas Company of New York, is now with the Central Union Gas Company, New York, N. Y.

F. M. ROSENKRANS, formerly with the Henry L. Doherty Company, 60 Wall Street, New York, N. Y., has been transferred to the Kansas City office, which is at 601 Dwight Building, Kansas City, Mo. Mr. Rosenkrans is connected with the New Business Department.

WILLIAM B. WAY, United Fuel & Gas Company, Charleston, West Virginia, can now be reached at the Pittsburgh Athletic Association, Pittsburgh, Pa.

WILLIAM E. MILLS, special representative of the Magee Furnace Company, Boston, Mass., is now with the Glenwood Range Company, Taunton, Mass.

LEON F. BABCOCK, gas efficiency engineer for the Cities Service Company, New York, is now connected with the Danbury and Bethel Gas & Electric Company, Danbury, Conn.

ALVAH W. YOUNG, new business manager, Westchester Lighting Company, Ossining, N. Y., is now with the Long Island Lighting Company, Mineola, L. I.

ON JULY 22 F. C. Freeman, A. F. Short, R. L. Fletcher, and W. G. Rich, all of Providence, journeyed to Worcester, Mass., where they defeated G. E. Stephen, Harold Dalbeck, Cornelius Cronin, and E. H. Bauer of the Worcester Gas Light Company, in the third annual Providence-Worcester Golf Match. The Providence team won by one hole in match play and three strokes in medal play.

C. F. JAQUES has been appointed sales manager of the Acorn Division of the Standard Gas Equipment Corporation. Sixteen years ago he was representative for the then Rathbone-Sard Company, becoming Pacific Coast manager nine years ago. Since 1921 he was engaged in special work for the company, until it was absorbed by the Standard Gas Equipment Corp.

FREDERIC H. HILL, vice-president and general manager of the Elmira Water, Light and Railroad Company, has been elected a director of the board of directors of the Chemung Canal Trust Company, Elmira, N. Y.

In the July issue of THE MONTHLY William H. Cadmus, storekeeper Public Service Electric & Gas Company, Jersey City, N. J., was reported as having joined the Koppers Construction Company, Pittsburgh, Pa. This was an error, as the item should have referred to Fred B. Cadmus.

COMPANY CHANGES

THE WINSTON-SALEM GAS COMPANY, Winston-Salem, N. C., is now known as the North Carolina Public Service Company.

STRAIT & RICHARDS, INC., of Newark, N. J., should now be addressed as the Homestead Heater Company, Newark, N. J.

THE BELOIT WATER, GAS & ELECTRIC COMPANY, of Beloit, Wisc., is now part of the system of the Wisconsin Power & Light Company, Madison, Wisc. A branch office will be maintained at Beloit.

THE HURLEY MACHINE COMPANY, NEW YORK, N. Y., has changed its name to the Electric Household Utilities Corp., New York, N. Y.

THE NEWBURYPORT GAS & ELECTRIC COMPANY, Newburyport, Mass., should be addressed as the Haverhill Electric Company, Newburport, Mass.

THE ST. PAUL GAS LIGHT COMPANY and the South St. Paul Gas & Electric Company are now part of the Northern States Power Company, at St. Paul and South St. Paul, Minn.

OPPORTUNITES ABROAD

Six-burner gas ranges are wanted for purchase by a Canadian firm. Interested American manufacturers can secure further information by addressing the Bureau of Foreign and Domestic Commerce, referring to Trade Opportunity No. 21719. The purchaser in this case is also willing to act as agent.

Builders Guests of Gas Companies

THE Worcester Gas Light Company was host to about 30 local architects and builders at an informal dinner recently in the first of a series of get-together meetings arranged by the gas company in order to bring to the attention of builders the growth and development of the gas industry, especially in regard to the wider use of gas for heating and other purposes.

Paul B. Morgan, president of the company, welcomed the guests and turned the meeting over to Edward H. Bauer, manager of the company, who acted as toastmaster and introduced leading representatives of companies manufacturing gas equipment.

In Memoriam

Herbert E. Stiteler, United Gas Improvement Company, Philadelphia, Pa.

Alexander Donald, Consolidated Gas, Electric Light & Power Co., Baltimore, Md.

The Future of the Gas Industry

(Continued from page 530)

gas plant would produce at least 20,000,000 heat units ready for effective work; and in addition valuable by-products would be saved which now go up in smoke through countless chimneys.

When one attempts to visualize the thousands of residence and apartment house furnaces in the City of New York, for instance, many of them in the hands of unskilful operators, each furnace supplied from a separate coal pile stored on the premises, each requiring to be looked after several times a day, one begins to get some idea of the enormous waste of fuel and of human energy involved in operating all of these installations as independent units, including the expense and inconvenience of handling and storing the coal and removing the ashes, with the resultant dirt and dust that injures rugs, furniture and draperies and is certainly not conducive to health or bodily comfort.

When one contrasts this with the same number of installations using gas as fuel, supplied from a central station and therefore, not subject to ordinary stoppages and interruptions nor to wide fluctuations in price, absolutely clean and free from dirt, dust, smoke, soot and ashes, needing no space for storage, requiring little attention and no labor, with temperatures automatically maintained at any desired point night and day, one gets some measure of the potential value of gas as a conserver of human and material resources and realizes that the industry's slogan, "You can do it better with gas," is no empty phrase.

Here is a vision of the future—whether of the near or of the distant future depends upon factors that cannot now be precisely evaluated. At any rate, measurable progress has already been made toward its fulfillment, and its complete realization should present no greater difficulties than were encountered at similar stages by other services and facilities which are now commonplaces of our everyday life.

One "fly in the ointment" with respect to the house heating business, from the gas company standpoint, is that, unlike the industrial business, it is seasonal, lasting but a few months a year, and unless balanced by an equal amount of summer load, a considerable portion of the manufacturing plant will be idle a large part of the year. However, as it is expected that the house heating load will be taken on gradually, it should be possible to build up a corresponding summer load and in this way level off the peaks and fill up the valleys of the load curve. In water heating and in gas refrigeration, which latter is just coming to the fore—to mention but two possibilities—there is already promise of a summer business that will tend to equalize the winter load of house heating by the time that becomes of substantial proportions. The situation is a challenge to the enterprise and initiative of the industry which may be relied upon to cope with any difficulty.

Enough has been said, the writer thinks, to show that that ancient bugaboo, the so-called "saturation point," holds no immediate threat to the industry as a whole.

THE QUESTION OF RATES

Before gas can reach the point of fullest utilization, however, it must be freed of certain legislative restrictions that still hamper it in some places. For example, the old "flat" rate, established years ago when gas was used for but one purpose—lighting—served well enough as long as this condition prevailed, but it acts as a brake upon the development of the service along economic lines under present-day conditions of diversified use. Yet it still remains imbedded in some of our statutes. It should be eliminated, and gas

(Continued on page 566)

Affiliated Association Activities

Empire State Gas and Electric Association

This Association will hold its annual meeting at the Lake Placid Club, Monday, October 4 and Tuesday, October 5. Although the program has not been definitely arranged as yet, there is ample assurance that the meeting will be of the same high calibre as past meetings of this Association.

President E. C. Scobell will open the meeting with the presidential address. The reports of the secretary and treasurer will follow, the former covering the activities of the six sections. The following reports will be given: Committee on Highway Lighting, by F. B. Corey, chairman; Committee on Farm Service Policy, C. S. Ruffner, chairman; New York State Committee on Public Utility Information, M. S. Sloan, chairman.

There will also be an address on the selection and training of the utility company's employees, by S. S. Board, Director of the Yale Graduate Placement Bureau. Theodore J. Grayson, Director of the Evening School, University of Pennsylvania, will discuss some phase of the holding company problem, and Hon. George R. Van Namee, member of the New York State Public Service Commission, will also deliver an address. Further announcements of the program and speakers will be made in the October issue of the Monthly.

Only morning sessions will be held, the afternoon being devoted to golf and other forms of recreation. Those who have visited Lake Placid know that it is an ideal spot to meet for convention purposes, and as the entertainment staged by this Association is the very best, those attending are assured of a good time.

A President's reception will be held on Monday evening, Oct. 4. The election of officers will take place on Tuesday morning, Oct. 5.

Wisconsin Utilities Association

An attractive program has been arranged for the annual convention of the Commercial Section of this Association to be held at Sherwood Forest Hotel, Green Lake, Wisconsin, Thursday and Friday, September 9 and 10. Chairman L. M. Williams will be in charge and deliver the opening address. A few of the papers to be presented are: "Better Relations with Contractor-Dealers" by C. A. Dow; "Co-operation—What It Will Do—From the Gas Jobbers and Plumbers Viewpoint" by F. A. Lemke; "Getting Gas Merchandising on the Right Basis" by C. A. Pepper; "Doubling Up the Output" by A. A. Schuetz; "American Gas Association, Its Commercial Plans and Aims" by R. J. Canniff; "The Real Plan and Purpose of Home Service" by Mrs. Katherine Delaney; "Who Polishes Your Door Knob?" by C. B. Batman; "Utility Merchandise Advertising" by Dempster Murphy.

The annual dinner will be held in the evening of September 9 at which a surprise program of entertainment will be sprung. Other entertainment features will be golf tournaments, ladies card party, swimming and boating. Executive Secretary, John N. Cadby, reports that indications point to a record-breaking attendance.

The annual convention of the Accounting Section of the Wisconsin Utilities Association will be held in Wausau sometime in October.

Gas Company to Aid In Curbing Disasters

THE famous gray morning in 1905 that put San Francisco in the public eye will never be enacted in Los Angeles. The horrors and terrors of earthquakes and other disasters do not appeal to the people of the Southern California city, and they are taking steps to protect themselves and their property.

An idea of the extent to which gas companies and other public utility organizations are cooperating with the general public to protect the welfare of the community is given in the movement which has been inaugurated in Los Angeles to meet and capably cope with any conceivable public disaster.

The movement, which was originated by the Los Angeles Chamber of Commerce, will coordinate the efforts of all the public utilities that might be concerned in such a calamity. Each utility, water, electric, gas, and telephone, is to organize within itself a definite plan of attack.

The organization worked out by the gas group is purposely brief so that all delays, causing emergency work to be slowed up, will be eliminated.

A suitable bas for operations within the city and two or more branch bases at strategic points will be established. In these centers there will be maintained charts of the gas works and holder stations, indicating the outlet control of the gas. There will also be charts of the gas distribution systems, showing main line valves.

A complete record of the personal responsibility for operations within each company will be included in the general plan. In this way any catastrophe that might visit the city can be met.

Of Interest to Home Service Workers

Home Economics Women Hold Convention

THE American Home Economics Association held its annual convention in Minneapolis recently with an attendance of 1500 women.

This convention is of particular interest to the home service directors in gas companies and several Directors attended.

Among these were: Mrs. Anna J. Peterson, The Peoples Gas Light and Coke Company, Chicago; Mrs. Eva Hawkins Shanks, Public Service Company of Northern Illinois; Mrs. Luella M. Fisher, the Eriez Stove Company; Miss Vivette Gorman, The Peoples Gas Light and Coke Company, Chicago; and Miss Ada Bessie Swann, Public Service Electric and Gas Company, Newark.

Within the Association is a section known as the Women in Business Section. Over some two hundred women registered in this Section this year, an increase of 100 per cent over the registration in this Section last year, showing that many women with home economics training, who have been teaching, have changed their positions and entered the commercial field, and among these are the girls who are directing Home Service Departments for utility companies.

The Women in Business Section had two afternoon meetings and a round table lunch discussion. The gathering on Thursday afternoon was devoted to the business of the Section and the subjects of "Publicity" and the "Training for Home Economics in Business" and "Co-ordinating the Supply of and the Demand for Home Economics in the Business Field" were discussed.

"Making the Consumer's Tie-Up" was also the subject of the address and discussion. This was presented by Leone Rutledge of the Davis Baking Powder Company.

Miss Mary Barber of the Post Cereal Company, Battle Creek, Mich., was elected the Chairman of the Business Section by the women. She will succeed Bess H. Rowe. Miss Ruth Watson of the Royal Baking Powder Company, New York, was elected secretary.

The key-note of the entire convention was the creating of better homes in America through the training of the child in school in home economics and by furnishing the homemaker correct information on the problems of homemaking, and making such information easy for her to obtain.

Home Economics is at the cross-roads. The home economist has long assumed and contributed to the proper feeding, housing and growth of the human family. Now it is necessary to meet other needs if the good life of the home is to be made more of accomplishment.

It is necessary for the home economist to be interested in many questions growing out of the new modern social order of the times. She must be interested in the rising divorce rate, crime wave, strikes, workmen's wages, city congestion, family incomes. It is necessary for the home economist to study and find out how best to meet family needs of the present day and to be interested from the point of view of the family itself.

The home economists will take their place in this new order of life, meeting the struggle of these vital problems as in the beginning they met the simple ones of the proper feeding, housing and growth of the family.

HOME SERVICE LUNCHEON

TO further the effort being made to have all home service directors attend the annual convention of the A. G. A., plans have been made to have a luncheon and round table discussion at the Hotel Shelburne, Wednesday, Oct. 13, the day home service is presented in the Commercial Section Program. This luncheon will be open to all directors and their assistants.

Those planning the program have asked that all reservations be made through Miss A. Deane Dowell, home service counsellor, A. G. A. Headquarters.

ALTHOUGH the home service department of the Utica Gas and Electric Company, Utica, N. Y., was organized but a short time ago, November, 1925, more than 1100 homes have been called upon since that time. Miss Grace McPherson, director, is doing work that consists mainly of calling on customers who have trouble with their appliances, teaching economy and efficiency of operation. Since the Utica company does not sell appliances, her problems are different from those of most directors.

Mrs. Hazel Linebaugh, Capital Gas and Electric Company, Topeka, Kansas, is working with the prominent women's clubs of the city and has developed some pleasant relationships. Recently twelve women conducted an angel food baking contest on the company's sales floor. Not only did this create considerable interest in itself, but it also caused a great many women to visit the display floor who had not been there before.

At one of the closing cooking demonstrations of the New Haven Gas Light Company, New Haven, Conn., Miss Frances Mathis organized a shore picnic. It was held on June 30. The outdoor lunch was a treat, and "a good time was had by all." Work like this is succeeding in keeping the classes together in the off-season.

(Continued on page 572)

Women Employees of Westchester Lighting Learn Prone Pressure Method

THE illustration shows several of the young women employees of the Westchester Lighting Company being given instruction in the Schaefer Prone Pressure Method of Resuscitation. Instruction in the Resuscitation Method has been systematized to a high degree at the Westchester organization, and present plans indicate that within a few months the entire personnel of the company will have become thoroughly familiarized with it.

Those in charge have approached their task with a thoroughness and completeness that is highly commendable. At present over seventy of the men, representatives of the various departments, are undergoing instruction with a view to becoming adept in the method. They in turn will serve as instructors to about two thousand male employees of the company. Meanwhile, the women are being trained individually by a registered nurse who is an expert on the subject.

The value of the Schaefer Method has been emphasized time and time again but never so emphatically as at the recent presentation of the Samuel Insull Medal to George Layman, an employee of the Westchester company, for his skill and alertness in the saving of the life of a fellow employee by means of the Schaefer Method. The presentation of the award was made by Eugene H. Rosenquest, President of the Westchester Lighting Company, at a representative gathering of the employees.

The women appearing in the picture are: Standing, left to right: Miss Ruth Paradise, instructor; Mrs. Cecil G. Harvey, Miss Ethel Towers, Miss Edith Yeager, Miss M. Deegan, Mrs. M. Man-

Learning the Prone Pressure Method of Resuscitation

ton, Miss Florence Strobel, Miss Mazie Gerrity, Miss Mildred Ryan, Miss Helen E. Seiffert, Miss Anna Robertson, Mrs. May Coles, Miss C. Otten, Miss S. K. Lawler, Miss Margaret Hutton, and Miss V. Caulkins.

Those giving the demonstration are: Miss M. V. Bacon and Miss Mildred Gray.

Surveying House Heating Market

(Continued from page 541)

to ascertain from the building permit office just how many houses were constructed during the previous year or years, dividing the total into groups, as say under $2000.00, from $2000.00 to $4000.00, from $4000.00 to $7500.00 and over $7500.00.

Different localities will differ as to conclusions, for some cities are conspicuously conservative, others notoriously extravagant. But taking an average type of American city, one might conclude that the houses under $2000 are not potential customers, that the next group would be prospects for a floor furnace with or without a radiant heater, and the average consumption calculated in the aggregate, that the next group would be good for a gas furnace plus one or more radiant heaters, while the highest-priced group would come in for gas fired boilers, hot water, steam or vapor besides several radiant heaters.

All of this makes an interesting table to ponder over. What percentage can be obtained? That depends on two things: The rate for gas and the enthusiasm back of the sales efforts.

It is not out of place to estimate the possible maximum of gas heating prospects in the middle-class and well-to-do homes at 100 per cent, considering that gas has such a tremendous margin over solid fuel that it is simply a question of how hard one wishes to push the efforts and how big a percentage of total house heating load the company is willing to assume.

Airplane in Utility Operation

(Continued from page 534)

To be credited against this are the following items:

Present value of airplane	$1000.00
Present value of camera	750.00
Present value of dark room equipment	750.00
Supplies on hand	100.00
Total	$2550.00

In addition to the amount charged to plane and camera, some $1500 in time and material was spent in taking 250 obliques not listed in the above surveys. Deducting this and the present value of equipment, the approximate cost of the surveys has been $12,584 less $4050 or about $8000.

The amount of work involved in making a mosaic map of a certain area is at least twice that necessary per mile to make a lineal survey, and with this assumption it is calculated that the mosaic maps completed have cost approximately $50 per square mile, while the right-of-way surveys have cost $25 per lineal mile. But do not forget the right-of-way maps are one mile wide.

With proper equipment, operated on any sort of reasonable load factor (which Louisville itself cannot give) these costs can easily be cut in half. The advance of the art is very rapid and even in the short time since Louisville purchased this plane, one far superior can be purchased for the same money.

The work done has been cheaper than by contract, prices quoted per mile on the above scales and accuracy (½ of 1%) varying from $80 to $120 per mile.

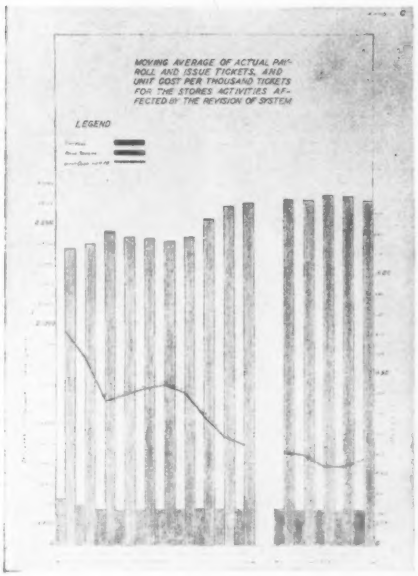
As soon as companies the size of ours become familiar with the cheapness and safety of the present triple engine, stable type of aircraft, and learn their value not only for surveying but also for emergencies and for transporting men and material, they will be considered as essential a piece of equipment as is a transit, level rod or automobile.

ACCOUNTING SECTION
DEWITT CLINTON, Chairman ALBERT L. TOSSELL, Vice-Chairman
H. W. HARTMAN, Secretary

Stores Accounting in California

New System Used By Southern California Gas Company Has Many Interesting Features

IN the latter part of 1923 the Southern California Gas Company instituted an investigation of its stores accounting system. Certain defects in current methods of accounting for material and supplies had been recognized for some time, defects due to the fact that the company's growth had been so rapid as to preclude the possibility of considering in detail the merits or demerits of its departmental system.


MOVING AVERAGE OF ACTUAL PAY-ROLL AND ISSUE TICKETS, AND UNIT COST PER THOUSAND TICKETS FOR THE STORES ACTIVITIES AFFECTED BY THE REVISION OF SYSTEM
LEGEND

The Black Line on the Graph above Illustrates the Decline in Unit Cost for Stores Tickets, Effected by the Revision of System.

The stores research was undertaken and included studies not only of our own methods but also of those employed in the stores procedure of many other utilities.

As an outcome of this investigation, it became apparent that there are three fundamental pre-conditions of an effective accounting system, as follows:

1. A complete allocative listing of all supplies, to serve as a guide in replenishing stock, as a protection in case of fire losses, and as a record to verify inventories;

2. Price lists for supply charges and for inventorial verification;

3. A periodical inventorial system to verify records and to prevent material shortages.

The research revealed that some utility corporations, along with many commercial companies, had adopted the individual requisition plan for each item issued. After a thorough investigation of its possible advantages and drawbacks, the company decided to establish this system as a basis for the revised accounting procedures.

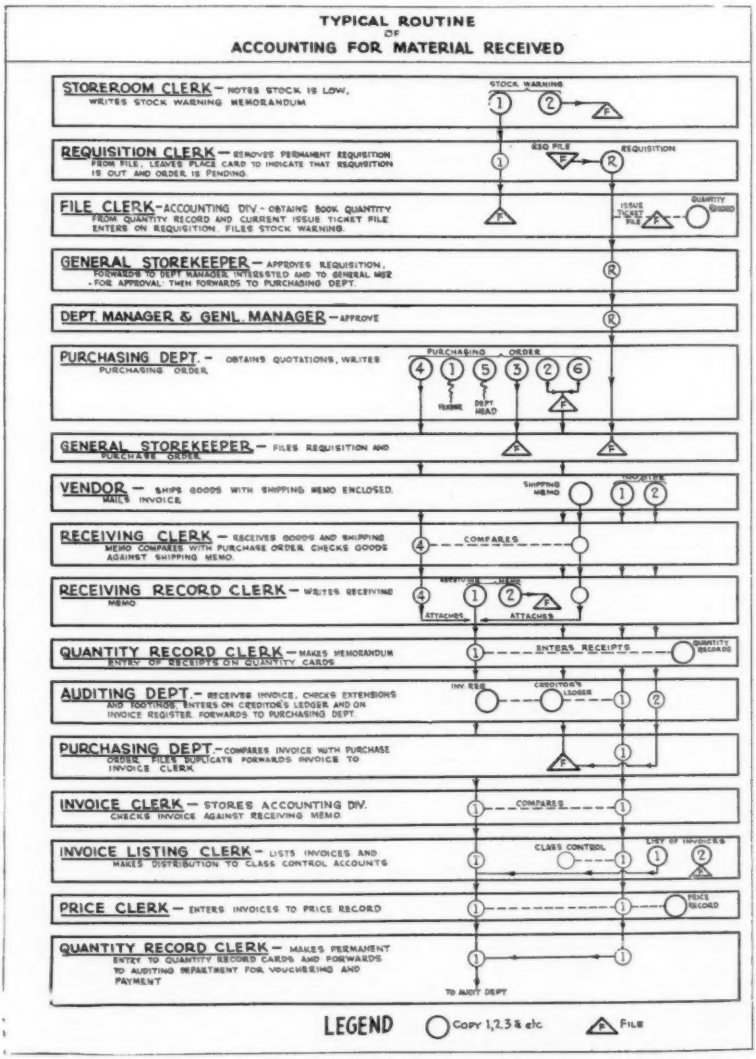
A direct physical control over issues on the part of the storekeeper appeared to be the only effectual method of safeguarding stores supplies. Any attempt to maintain an accounting through historical records in some other department remained futile unless such a fundamental control was established. (This viewpoint is often referred to as the Operating Method, as distinct from the Accounting Method.)

In the latter part of 1924 a trial installation of the recommended plan for stores accounting was made in the Glendale offices. Following the success of this test measure, the management authorized

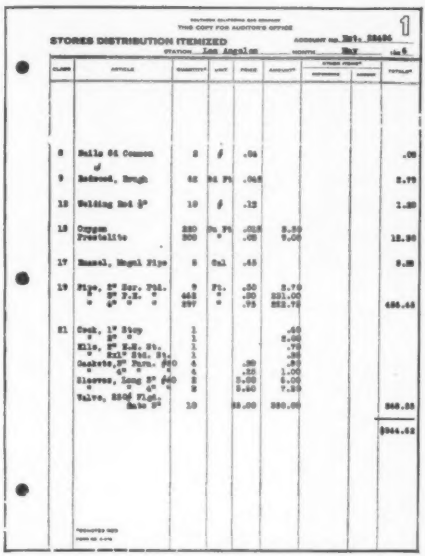
adoption of several features of the revised system. In February, 1926, major modifications were made in accounting procedures, and new equipment—such as tub-desks, comptometers, and an Underwood fanfold machine—was purchased.

The major accomplishments of the new system are briefly enumerated as:

A standardization of nomenclature for materials and supplies has been effected, and descriptions of all items have been reduced to a uniform basis. In order to perpetuate accurate and standard descriptions of material received and issued, the coding system, which has been used on stores accounting records in the past, is now also applied to the bins in the storeroom. All items withdrawn are thus identified, not only by their description, but also by corresponding code numbers.


TYPICAL ROUTINE
OF
ACCOUNTING FOR MATERIAL RECEIVED
STOREROOM CLERK — NOTES STOCK IS LOW, WRITES STOCK WARNING MEMORANDUM
STOCK WARNING
REQUISITION CLERK — REMOVES PERMANENT REQUISITION FROM FILE, LEAVES PLACE CARD TO INDICATE THAT REQUISITION IS OUT AND ORDER IS PENDING
REQ FILE
REQUISITION
FILE CLERK — ACCOUNTING DIV. - OBTAINS BOOK QUANTITY FROM QUANTITY RECORD AND CURRENT ISSUE TICKET FILE ENTERS ON REQUISITION. FILES STOCK WARNING.
ISSUE TICKET FILE
QUANTITY ISSUED
GENERAL STOREKEEPER — APPROVES REQUISITION, FORWARDS TO DEPT MANAGER INTERESTED AND TO GENERAL MGR - FOR APPROVAL THEN FORWARDS TO PURCHASING DEPT.
DEPT. MANAGER & GENL. MANAGER — APPROVE
PURCHASING DEPT. — OBTAINS QUOTATIONS, WRITES PURCHASING ORDER
PURCHASING ORDER
VENDOR — MAILS INVOICE
SHIPPING MEMO
INVOICE
RECEIVING CLERK — RECEIVES GOODS AND SHIPPING MEMO COMPARES WITH PURCHASE ORDER CHECKS GOODS AGAINST SHIPPING MEMO.
COMPARES
RECEIVING RECORD CLERK — WRITES RECEIVING MEMO
RECEIVING MEMO
ATTACHES
QUANTITY RECORD CLERK — MAKES MEMORANDUM ENTRY OF RECEIPTS ON QUANTITY CARDS
ENTERS RECEIPTS
QUANTITY RECORDS
AUDITING DEPT. — RECEIVES INVOICE, CHECKS EXTENSIONS AND FOOTINGS, ENTERS ON CREDITOR'S LEDGER AND ON INVOICE REGISTER. FORWARDS TO PURCHASING DEPT.
INV REG
CREDITOR'S LEDGER
PURCHASING DEPT. — COMPARES INVOICE WITH PURCHASE ORDER, FILES DUPLICATE FORWARDS INVOICE TO INVOICE CLERK
INVOICE CLERK — STORES ACCOUNTING DIV. CHECKS INVOICE AGAINST RECEIVING MEMO
COMPARES
INVOICE LISTING CLERK — LISTS INVOICES AND MAKES DISTRIBUTION TO CLASS CONTROL ACCOUNTS
CLASS CONTROL
LIST OF INVOICES
PRICE CLERK — ENTERS INVOICES TO PRICE RECORD
PRICE RECORD
QUANTITY RECORD CLERK — MAKES PERMANENT ENTRY TO QUANTITY RECORD CARDS AND FORWARDS TO AUDITING DEPARTMENT FOR VOUCHERING AND PAYMENT
TO AUDIT DEPT.
LEGEND
COPY 1,2,3 & etc
FILE

The Chart above Illustrates Stores Procedure in Handling All Supplies Received



STORES DISTRIBUTION ITEMIZED

CLASS	ARTICLE	QUANTITY	UNIT	PRICE	AMOUNT	TOTALS
8	Nails 6d Common	8	#	.04		.08
9	Redwood, Rough	62	Bd Ft	.045		2.79
12	Welding Rod #°	10	#	.12		1.20
15	Oxygen	250	Cu Ft	.015	3.50	12.50
	Prestolite	300	"	.03	9.00	
17	Enamel, Engel Pipe	5	Gal	.65		3.25
19	Pipe, 2" Scr. Pipe	9	Ft.	.50	3.70	486.45
	" 2" P.E. "	448	"	.30	221.00	
	" 4" " "	297	"	.75	262.75	
21	Cock, 1" Stop	1			.60	944.85
	" 2" "	1			5.00	
	Ells, 2" S.E. St.	1			.70	
	" 2x1" Red. St.	1			.60	
	Gaskets, 2" Rem. #60	4		.20	.80	
	" 4" " "	4		.25	1.00	
	Sleeves, Long 2" #60	2		3.00	6.00	
	" 4" "	2		3.65	7.30	
	Valve, 250# Flgd. Gate 2"	10		88.00	880.00	
						$944.85

SOUTHERN CALIFORNIA GAS CO.

STORES ISSUE NO. 216035 L. A.

1

SUMMARY QUAN. AMOUNT

REQ'N NO. ACC'T NO.

KEY WORD

QUAN.

DATE CODE

FORM S-220 L. A.

MATERIAL REQUEST № 18303 DATE 5/23 1946

STORE TOOK L.D. ACCOUNT TO BE CHARGED Dist. 77486

MATERIAL USED FOR Maintenance

QUAN. TO WANTED	DESCRIPTION	CODE No.	QUANTITY ISSUED
10	Valves 3" 250# F/gd gate-CX-2721-G6ST		10

REQUESTED BY A. Herrera AUTHORIZED BY A.H. Common

FILLED BY Mills CHECKED BY L.D.

STORES QUANTITY RECORD

ARTICLE

RECEIPTS						ISSUES				ISSUES			
DATE	ORDER No.	INVOICE OR SHOP ORDER No.	P.T.L.	QUANTITY	DATE	REF.	QUANTITY	BALANCE	DATE	REF.	QUANTITY	BALANCE

SOUTHERN CALIFORNIA GAS COMPANY

VALVE El-6065
250# FLANGED GATE F & D
PACIFIC VALVE CO.
3"' $290

Master File for Code Numbers. Changes etc. are recorded here.

SOUTHERN CALIFORNIA GAS CO.

DISTRIBUTION OF STORES

DATE May 1946 ACCOUNT NO. Dist. 77486

CLASS	CHARGES	CREDITS	CORRECTIONS DR. C/N ON ORIGINAL CR.	CORRECTIONS CR. C/N ON ORIGINAL DR.
8	08			
9	279			
12	120			
15	1230			
17	325			
19	45645			
21	36855			
TOTALS	84467			

FORM S-570 SM 3-20-41-79

A Page of Revised Forms Used in Stores Accounting

A Corner of the Stores Office

Furthermore, an addressograph plate has been prepared for each item, from which all new records are printed. An ultimate precaution has been the introduction of an Error Record, which will focus attention upon types of errors and upon the employees responsible for making them.

These measures, taken to insure correct descriptions of materials, have been of even greater importance than the accounting system itself or any other single feature of the revision work.

During the last five months of revised procedure, the department has had far more accurate records and fewer errors than in the past.

In the early part of 1925 recapitulation sheets for fittings used in connection with installation of services, meters, and regulators, were adopted. These reduced the number of individual items to be priced and accounted for by approximately fifty per cent.

The unit-issue-ticket plan has made possible the elimination of expensive tabulating machines, which have required the services of specially trained operators. An additional simplification of record keeping was brought about by the installation of a condensed form of memorandum account for fitters' working stock, which has replaced some ten thousand memorandum cards.

Features of the revised accounting system which differ from the old plan are these:

1. Elimination of one set of quantity cards at the Los Angeles storeroom (quantity cards are retained at all outside storerooms);
2. Installation of price-records of easy access to a single clerk;
3. Elimination of accounting by-values for each kind of material;
4. Abolishment of expensive tabulating machines for summarizing debits and credits;
5. Institution of a detailed statement of materials and supplies issued, for use in analysis of estimates by the auditing department;
6. Inauguration of a billing system for miscellaneous sales;
7. The use of an Underwood fanfold machine for writing requisitions;
8. Trial adoption of a permanent form of requisition for purchases.

The final report on distribution of material and supplies for the month of June, 1926, was submitted by the stores accounting division to the auditing department on July 10th. It should be noted in contrast that on March 31, 1925 (the beginning of the revision period), balancing of accounts was two months in arrears. There are still many refinements to be made in the stores system, one of the most important being a determination of minimum stock requirements, to be reached by a complete analysis of stock movements; an elimination of dormant items; and a grouping of materials which will result in deletion from accounting and records the numerous insignificant items which appear at the present time.

Publicity and Home Conditions

How Publicity and Advertising Can Work Advantageously for the Gas Company and the Customer

By BERNARD J. MULLANEY
Vice-President, The Peoples' Gas Light and Coke Company, Chicago, Ill.

ADVERTISING is merely a part of a larger thing which, for the purpose of this discussion, may be called publicity; a part of it, not a thing apart.

To see advertising as one thing and publicity as an entirely different and unrelated something else is to be narrow-visioned and short-sighted. This form of myopia has been prevalent on our side of the Atlantic, especially among advertising agents and representatives of advertising media, who are naturally the chief promoters of advertising; it may exist on your side.

Bernard J. Mullaney

In much of the hectic effort to "advertise advertising," the strength of advertising has been over-advertised, with distinctly hurtful consequences. It has been pictured as the genial jinn of unlimited power—equal to any task, alone and unaided, from increasing the sales of a ginger beer to colonising a continent or winning a war.

Of course it isn't anything of the kind. There are many "selling jobs that advertising alone and unaided cannot do; at least it cannot do them on an economically practicable or commercially profitable basis. When it attempts them and fails, the loss is not only that of money spent; there is (more important in the long run) the subjective loss of faith, and that adds to the burden of all sincere practitioners of advertising, in whatever branch of it they may be. The cause of advertising is not helped by claiming too much for it or trying to make it do too much.

Often — more often than not — advertising works best when co-ordinated with the larger applications and implications of publicity, using the word in its broadest sense. Then advertising comes nearest to justifying the tallest claims made for it as either an economic or a social force in "selling" something, whether it be a commodity, a service, or an idea.

At this point, a concrete illustration may serve to illustrate these personal opinions.

Some four and a half years ago the gas company detected a slackening in sales of gas for home use. Home cooking seemed to be declining. The War was blamed for it, as for so many things. Increasing numbers of housewives seemed to be getting the habit of meals outside the home, of buying ready-cooked foods, or otherwise reducing kitchen operations. The problem was how to lure them back to the home.

From the "Advertising World," London, England.

It is conceivable that advertising, alone and unaided, might have been made to do this; but not for the amount of money the company could afford to spend. In lieu of this, the company offered its customers the assistance of a home service department, organized to promote better housekeeping and home-making.

Home service was advertised. Again, it is conceivable that advertising could have done the job of establishing and popularizing home service; but it did not seem either practicable or possible to get the desired results from advertising alone at reasonable expenditure of time and money. There were obstacles. The company was (to put it mildly) emerging from a period of unpopularity. This tended to lessen the effect of straight advertising, especially when the thing advertised was new.

The idea of a home service department had to be "sold": its excuse for existing; the sincerity of its promoters; the specific service it was prepared to render; the efficiency of its staff, and so on. Obviously the many angles and aspects of the situation that had to be dealt with, if advertising alone were applied, would necessitate a long and complicated and expensive campaign.

The task was thought to be—and rightly thought, we believe—one for publicity in the broadest sense of the word. All effort to introduce home service to the community was keyed to be informational. All available channels for disseminating information were utilized; the company's employees; business interests that might be affected, such as food producers; women's clubs, church clubs, neighborhood clubs and general welfare organizations; the news columns of newspapers and other publications, and the radio, especially the radio. Always the informational tone was maintained.

Advertising was consistently employed to do all that advertising seemed able to do, but informational publicity found fertile soil where advertising would have found only barrenness.

The informational publicity method is followed as strictly, in carrying on the home service department's daily work, as it was for the introduction of home service to the community. It is honest-to-God information—literally.

The cooking counsel can be applied on a wood, coal, oil or electric stove equally as well as on a gas stove. Home problems that have no relation to cooking or other fuel utilization are ironed out as cheerfully as the kitchen kinks are. Harassed housewives are free to ask for—and get expert help on any kind of question, from planning a dinner for six to organizing daughter's coming-out party; from planting a garden to papering the attic.

The results, from the view-point of company interests, appear to justify the method followed.

In 1925, through home service, we had personal contact with 225,000 customers, by telephone, by mail, and face to face in lecture demonstrations. This takes no account of other thousands and tens of thousands who "listened in" at daily radio lectures, or read the substance of those lectures in their daily newspaper.

Telephone calls to home service for information or advice on some specific question averaged more than 50 a day—upwards of 16,000 for the year. There were about 28,000 letters, also asking specific questions—an average of nearly 100 a day—that required answers. The regular mail is close to 1000 letters a month. Occasional "stunts" run this up, as when one such brought 19,000 lettters in six weeks. Lecture demonstrations were staged during the year before about 150 women's clubs.

Such results for an enterprise like home service are simply beyond the reach of straight advertising, as meant by the "advertise advertising" yaw; certainly beyond it at anything short of staggering expense. Such results are possible only when the broader conception of publicity is applied—intelligent, honest, ethical, informational publicity.

This magazine could be filled with ex-

(Continued on page 570)

Exhibition to Break All Records

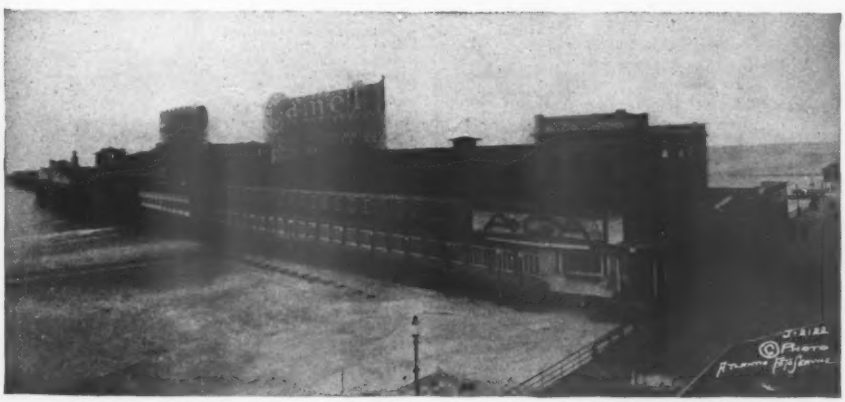
Already More Manufacturers Have Contracted for Space Than the Total Number Last Year

THE Eighth Annual Exhibition of the American Gas Association, which will be held in conjunction with the Convention at the Million Dollar Pier at Atlantic City, October 11-15, will be the world's largest showing of gas appliances and equipment. On August 27, approximately seven weeks before the convention, more applications for space had been received and filled than there were exhibitors at the Convention in 1925.

The leasing of the Million Dollar Pier is responsible for this unprecedented demand for exhibition space. The manufacturer company members of the Association wholeheartedly approved this step, as it automatically ended the scramble for space that has been characteristic of the last few conventions of the A.G.A. It also meant that there would be an increase of more than fifty per cent in the space over that of 1925, making it possible to arrange for larger booths.

Originally, the Exhibition Committee planned to have 50,000 sq.ft. available for exhibition purposes, but since all of this space was sold on August first it was necessary to arrange for an additional 10,000 sq.ft. It is felt that this will be ample to provide for the growing number of exhibitors and the ever-increasing demands for space. However, all manufacturers who plan to exhibit should immediately apply for space, as no further increases can be made after this additional space is sold. The Pier will be filled to capacity.

It has been said that the Annual Exhibition of the American Gas Association has grown faster than that of any other national organization. The following figures show the number of exhibitors and the amount of space sold in previous years:



The Million Dollar Pier, Scene of the Eighth Annual Convention of the American Gas Association, Will Provide a Fifty Per Cent Increase in Space over Last Year.

Year	Exhibitors	Space Sold sq.ft.
1919	110	8,606
1920	110	10,343
1921	112	9,518
1922	135	19,228
1923	165	24,972
1924	182	28,300
1925	208	33,500
1926	214	53,000

Since there is about seven weeks intervening before the Convention, it is felt that the 1926 Convention Exhibition will break all records made in the past. The Committee looks forward to at least 250 exhibitors. In view of the fact that the previous meeting places have been smaller than the Million Dollar Pier, this means the largest and best Exhibition ever held.

One of the interesting features of the 1926 Exhibition will be the first appearance of the official seal of the Appliance Testing Laboratory at an A. G. A. Convention. The work of testing gas tubing, ranges, space heaters, etc., has been progressing at record speed, the tubing tests having been completed, 580 ranges tested, and space-heater tests under way since August 1. The industry will have its first opportunity to see what this undertaking means to the future of the gas business.

The list of exhibitors is as follows:

Name of Exhibitor	Booth No.
Abendroth Brothers, Port Chester, N. Y.	407
A-B Stove Co., Battle Creek, Mich.	410
Accounting Section, A. G. A., New York, N. Y.	A. G. A. Exhibit
A. G. A. Laboratory Exhibit	201
Ajax Brass & Iron Co., West New York, N. J.	640
Alpha-Lux Co., Inc., New York, N. Y.	22
American Cast Iron Pipe Co., Birmingham, Ala.	1, 2, 3
American Gas Association, New York, N. Y.	A. G. A. Exhibit
American Gas Furnace Co., Elizabeth, N. J.	42
American Gas Products Corp., New York, N. Y.	135
American Gas Journal, New York, N. Y.	150
American Heater Corp., St. Louis, Mo.	611, 612
American Meter Co., New York, N. Y.	30
American Schaeffer & Budenberg Corp., Brooklyn, N. Y.	104
American Stove Co., St. Louis, Mo.	534,535
Andes Range & Furnace Corp., Geneva, N. Y.	623
Armstrong Cork & Insulation Co., Pittsburgh, Pa.	644
Arteraft Metal Products Co., The, Columbus, Ohio	312
Atlantic Tubing Co., Providence, R. I.	500
Automatic Gas Steam Radiator Co., Pittsburgh, Pa.	707
Automatic Safety Appliance Corp., New York, N. Y.	53
Bailey Meter Co., Cleveland, Ohio	147
Barber-Greene Co., Aurora, Ill.	54
Bartlett Hayward Co., Baltimore, Md.	125, 126
Beckwith Company, The, Dowagiac, Mich.	207, 208
Bernitz Furnace Appliance Co., Boston, Mass.	105
Birmingham Stove & Range Co., Birmingham, Ala.	529
Boone County Coal Corp., Philadelphia, Pa.	12
Bryant Corp., C. L., Cleveland, Ohio	411
Bryant Heater & Mfg. Co., The, Cleveland, Ohio	140
Bureau of Mines, Washington, D. C.	202
Burroughs Adding Machine Co., Detroit, Mich.	503, 504, 505
Byers Co., A. M., Pittsburgh, Pa.	151
Chambers Mfg. Co., Shelbyville, Ind.	524, 525
Chaplin-Fulton Mfg. Co., Pittsburgh, Pa.	144
Chapman Valve Mfg. Co., Indian Orchard, Mass.	37
Chicago Bridge & Iron Works, Chicago, Ill.	639
Chicago Vitreous Enamel Product Co., Cicero, Ill.	222
Clark & Co., Div., Geo. M., Chicago, Ill.	530, 531
Claus Mfg. Co., Milwaukee, Wisc.	405
Cleveland Gas Burner & Appliance Co., Cleveland, Ohio	209
Cleveland Gas Meter Co., Cleveland, Ohio	10
Cleveland Heater Co., The, Cleveland, Ohio	409
Cleveland Trencher Co., Cleveland, Ohio.	636, 637, 638
Clow & Sons, James B., Chicago, Ill.	517, 518
Columbus Heating & Ventilating Co., Columbus, Ohio	214
Combustion Utilities Corp., New York, N. Y.	40
Connelly Iron Sponge & Governor Co., New York, N. Y.	153
Connersville Blower Co., Connersville, Ind.	13, 14
Crandall Pettee Co., The, New York, N. Y.	51
Cribben & Sexton Co., Chicago, Ill.	304
Crown Stove Works, Chicago, Ill.	646
Cruse-Kemper Co., Ambler, Pa.	8
Cutler-Hammer Mfg. Co., The, Milwaukee, Wis.	15
Dangler Stove Co., Div., Cleveland, Ohio.	537, 538
Davis Emergency Equipment Co., Inc., New York, N. Y.	119
Dearborn Chemical Co., Chicago, Ill.	21
Detroit Range Boiler and Steel Barrel Co., Detroit, Mich.	635
Detroit Stove Works, Detroit, Mich.	404
Detroit Vapor Stove Co., Detroit, Mich.	625
Direct Action Stove Co., Div., Lorain, Ohio.	531, 532
Drake Non-Clinkering Furnace Block Co.	19, 20
Dresser Mfg. Co., S. R., Bradford, Pa.	106
Dunham Co., The, Berea, Ohio	606
Dun-Rite Clock Device Co., New York, N. Y.	528
Economy Governor Co., Anderson, Ind.	4
Electric Household Utilities Corp.	227
Electrolux Servel Corp., New York, N. Y.	609, 610
Elliot-Fisher Co., New York, N. Y.	510, 511
Equitable Meter Co., Pittsburgh, Pa.	108
Eriez Stove & Mfg. Co., Erie, Pa.	306
Estate Stove Co., The, Hamilton, Ohio	301
Floyd-Wells Co., The, Royersford, Pa.	225, 226
Gallaher Boiler Co., St. Louis, Mo.	143
Gas Machinery Co., The, Cleveland, Ohio	107
Gas Purifying Materials Co., Long Island City, L. I.	35
General Gas Light Co., Kalamazoo, Mich.	617, 618, 619
General Motors Truck Co., Pontiac, Mich.	138, 139
Giant Manufacturing Co., Council Bluffs, Ia.	110
Glenwood Range Co., Taunton, Mass.	406
Globe Stove and Range Co., Kokomo, Ind.	620
Grayson Manufacturing Co., The J. H., Athens, Ohio	412
Griffin & Co., John J., Philadelphia, Pa.	33
Grinnell Co., Inc., Providence, R. I.	624
Guardian Gas Appliance Co., Cleveland, Ohio.	408
Hays Manufacturing Co., Erie, Pa.	220
Helme & McIllhenny, Philadelphia, Pa.	34
Hoffman Heater Co., The, Louisville, Ky.	305
Home Incinerator Co., Milwaukee, Wis.	512
Home Service Committee, A. G. A., New York, N. Y.	A. G. A. Exhibit
Homestead Heater Co., Newark, N. J.	217, 218, 219
Honeywell Heating Specialties Co., The, Wabash, Ind.	223
Hotstream Heater Co., Cleveland, Ohio.	629
Humphrey Co., Div., Ruud Mfg. Co., Kalamazoo, Mich.	302
Hunt Co., Inc., C. W., West New Brighton, S. I., N. Y.	628
Improved Equipment Co., New York, N. Y.	703
Isbell-Porter Co., Newark, N. J.	9
Johns-Manville, Inc., New York, N. Y.	24, 25, 26
Kalamazoo Loose Leaf Binder Co., Kalamazoo, Mich.	501
Keystone Coal & Coke Co., Philadelphia, Pa.	701
King Refractories Co., Inc., Buffalo, N. Y.	641
Kompack Co., The, New Brunswick, N. J.	228, 229

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Lamneck Co., The W. E., Columbus, Ohio..... 224
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Lawson Mfg. Co., Pittsburgh, Pa. 514
Linde Air Products Co., New York, N. Y..... 136
Logan County Coal Corp., Cincinnati, Ohio.... 120
Lovekin Water Heater Co., The, Philadelphia, Pa..... 141
McDonald Ledger & Loose Leaf Co., Chicago, Ill..... 509
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Milburn Co., The Alexander, Baltimore, Md... 626
Milwaukee Gas Specialty Co., Milwaukee, Wis. 405
Mine Safety Appliances Co., Pittsburgh, Pa... 142
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Permutit Co., The, New York, N. Y..... 154, 155
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Pittsburg Water Heater Co., Pittsburgh, Pa. 200
Porcelain Enamel & Mfg. Co., Baltimore, Md. 700
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Youngstown Pressed Steel Co., The, Warren, Ohio..... 607

LIST OF APPROVED TYPES OF FLEXIBLE GAS TUBING AS OF JUNE 1st, 1926

3/8" Gaspruf Stove Tubing with Eureka Ferrules ..Atlantic Tubing Co.

5/16" "W" Gas Tubing with Eureka Ferrules ..Atlantic Tubing Co.

5/16" Gaspruf Stove Tubing with Aluminum Ferrules crimped on Chicago Tubing & Braiding Co.

5/16" Evertite Tubing with Aluminum Ferrules crimped on Eastman Mfg. Co.

5/16" Excello Flexible Gas Tubing with Aluminum Ferrules crimped on Excello Mfg. Co., Inc.

5/16" Indestructo Tubing with Aluminum Ferrules crimped on Federal Tubing Co.

5/16" No. 324 Sta-Tite Gas Tubing with Shrader Ferrules New York Gas Tubing Co.

5/16" No. 325 Sta-Tite Gas Tubing with Aluminum Ferrules crimped on New York Gas Tubing Co.

5/16" Penflex Metal Hose with Aluminum Ferrules crimped on Penn. Flexible Metallic Tubing Co.

5/32" Titeflex Metal Hose with Shrader Ferrules Titeflex Metal Hose Co.

5/16" Titeflex Metal Hose with Shrader Ferrules Titeflex Metal Hose Co.

1/4" Titeflex Metal Hose with Shrader Ferrules Titeflex Metal Hose Co.

Future of Gas Industry

(Continued from page 552)

companies, under proper supervision of public authority—that is, the public service commissions of the various states—should be permitted to adopt rate schedules that are sufficiently flexible to allow an equitable allocation of charges among the several classes of consumers, so that one class will not be penalized or favored as compared with another, but each will have a rate that encourages the maximum use of the service. The extension of gas into the industrial and commercial field, into house heating and other large installations, makes scientific rate structures of paramount importance; for it is generally recognized that one way to lower costs in any industry is through economies effected by large-scale production.

The same is true of standards of quality. These, like the approval and fixing of rates, should be left to the state commissions, created for this purpose. Arbitrary interference of the legislature, ignoring and overriding its own agent, the public service commission, is unjustifiable and invariably gives rise to long-drawn-out and costly litigation—costly to company and public alike—and is inimical to progress, for it consumes the energies of officials and employees who should be more usefully engaged. Whatever the outcome of such litigation, one fact can hardly be disputed: Legislatures have neither the time nor the facilities to deal adequately with such intricate and technical problems as utility rates and service standards. Serious as these drawbacks are as affecting the interests of individual companies, however, they have only a minor bearing on the future of the industry at large, for they will undoubtedly give way in time to a fairer and more enlightened policy based upon considerations of the general welfare and sound economic principles. To hasten this consummation is one of the prime objectives of the industry.

Although the writer has done no more in this brief survey than touch upon some of the channels through which gas is finding new and enlarged outlets, he has made it clear, he hopes, that the industry is in the full tide of strength and vigor and that its future rests upon firm and secure foundations. It is better organized than ever before, is alive to its opportunities, is animated by the spirit of service, and is striving to put itself in position where it can lighten the burdens of future generations even more than it has those of the past.

By special arrangement with the publishers of the Banker Magazine, the A. G. A. can furnish reprints of this article. Send your orders now.

Technical Paper

"A study of the Relation Between Properties of Cast Iron Pipe Tested under Impact, Internal Pressure, and Flexure, and the Corresponding Properties Found in Several Kinds of Test Specimens Taken Therefrom," is the title of a paper presented at a recent meeting of the American Society for Testing Materials.

The authors are Arthur N. Talbot, Professor of Municipal and Sanitary Engineering and in Charge of Theoretical and Applied Mechanics, University of Illinois, Urbana, Ill., and Frank E. Richart, Research Assistant Professor, Engineering Experiment Station, Laboratory of Applied Mechanics, University of Illinois, Urbana, Ill.

An Intimate Glimpse At Chinese Kitchens

EXCEPT for the fact that gas is the fuel instead of grass and wood, as in China, Chinese kitchens in American chop suey restaurants are closely fashioned after the pattern of the mud stoves in the Orient. There the stove is always broken before a family moves to a new abode. Here, the kitchen range is built of tile, but still on the model of the old. The great shallow pans, the ladles and the oil pots, however, are strictly Chinese, and strange jars of water chestnuts, the corymb of a water plant imported from China, and other jars filled with slices of bamboo shoots are much in evidence among Chinese kitchens here as in the East.

INDUSTRIAL GAS SECTION

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Comparison of Gas and Electricity

Although Each Has Applications in Which It Is Superior to the Other, Choice Must Be Governed by Conditions

By R. C. GOSREAU
Consulting Engineer, St. Louis, Mo.

KEEN competition between gas and electric companies for the industrial heating load is apparent throughout the country. The rapid advances in heating load made by both types of utility companies indicate that less satisfactory methods of heating are being abandoned in many industries. Which of these two heat sources has the superior merit has not been definitely determined for most uses, but there are certain applications in which one or the other shows a marked superiority.

The cost of heating in a process should not be based on the purchase price of cubic feet of gas or kilowatt hours of electricity, but should be figured with regard to the degree with which it is possible to utilize the potential energy in the source of heat.

The heat content of fuel gas in B.t.u. per cu.ft., determined by laboratory test, is constantly used as a basis for figuring the utility of a fuel gas or comparing it to some other fuel or source of heat. This quantity is not, however, a proper basis for such comparison, because there are many factors influencing an industrial operation which are not reproducable in the laboratory, and the laboratory determination, therefore, gives no clue to the results of the utilization of the fuel.

Just what proportion of the heat content of a gas is developed by a burner is not definitely known, but there are probably no burners that develop the same quantity of heat energy per unit of gas volume burned as is evolved by a laboratory calorimeter. Since there are no means available for easy determination, with even fair accuracy, of the amount of heat energy developed when a cubic foot of gas is burned in industrial equipment, a computation is usually made, in which the heat energy absorbed by the work is compared to the total heat content of the gas burned, in order to obtain the heating efficiency of the operation of equipment. Such a procedure does not show the actual efficiency of utilization, because, although in one case the burner may be efficient and the furnace design poor, in another case the reverse condition may exist, and no distinction can be made.

One important factor affecting the utilization percentage is the ratio of heat absorption by the work. The rate of heat energy input into the equipment should be related to the capacity of the work to absorb heat, or the heat losses will be excessive. In general, the larger the chamber in which the absorption takes place, the faster is the rate of heat transmission to the work, provided the chamber walls are at all times higher in temperature than the work. This fact is due to the greater radiation realized. But such large radiation surfaces also increase the radiation losses from the outside of the furnace. Under these conditions, if the rate of heat input exceeds the rate of absorption by the work, the excess must be represented by increased

Abstracted from "Chemical and Metallurgical Engineering," June, 1926, pages 337-339.

radiation from the outside of the furnace. The tendency in designing equipment is to build the setting so that a maximum of heat generation may be accomplished in a minimum of space, which results in decreasing the heat losses and accelerating the process to which the heat is applied. Any rate of heat energy generation faster than the rate of absorption means a loss. Therefore, the furnace volume should be as near the volume requirements of the work as may be.

Calculations of heat losses and heat utilization are generally but approximations, wide of the actual fact. Gas fuels in competition with other types of heat suffer injustice in such calculations, because they are based on factors determined in a laboratory under scientific methods of control and measurement. What really matters is whether the fuel proves economical in actual use.

The fuel requirement of a gas burning appliance is generally the first thing considered. The hourly demand for gas is a measure of the hourly rate of doing work. The rate of transfer of energy is variable, depending on the high and low temperature masses. High temperatures have greater intensity than low and at high temperatures molecular activity is greater. Also radiation is more intense at high temperatures.

For the transfer of heat from a furnace wall to an object within, the wall must first be brought to the temperature to which it is desired to bring the object. In most heating furnaces, the furnace is of greater surface and volume than the object being heated, so the walls, roof and bottom first reach the working temperature, then the heat transfer by radiation, conduction and convection proceeds.

In some equipment an attempt is made to heat by direct flame radiation. In such cases the flame impinges directly against the work that is being heated. When such a procedure does not harm the work it is more economical than indirect heating, but the practical disadvantages lie in the difficulty of control. When a muffle is used, heating is the slowest and most expensive, as the utilization factor is low. Another method of heating is to carry the hot waste gases along the furnace roof at a low velocity, the roof being well insulated. These gases radiate heat downward to the work. To be thermally efficient, such a furnace must have provision for using the heat remaining in the gases after they have left the furnace. Heat energy transfer from hot gases depends on the gas velocity, which should be low for good results. In any heating device using gaseous fuel, the rate of heat energy development and the rate of heat energy absorption must be synchronized so that the work can take up the energy as rapidly as it is developed.

There are three ways of applying electrical heating: By direct or radiated arc; by direct or radiated resistance; and by high frequency induction. In arc heating the material may be heated by radiation from an arc not in contact with the work, or the arc may make direct contact with the work in which case the heating is by radiation and also by energy given off from the arcs of contact between the electrode and the work. In resistance heating either the resistance elements radiate their heat to the work through the furnace atmosphere, or the heating is direct by passing the current through the work which becomes a part of the electrical circuit. In high frequency induction heating, an induced current is set up in the work, which is part of a secondary circuit, by means of a high frequency current in the primary circuit.

Resistance heating by radiation applies to every process using heat in a range from 100 to 2000 deg. F. The only limitation of this method lies in the ability of resistors to withstand heat. The material composing the resistors possesses definite electrical properties. These, for proper resistor material, are nearly constant and provide a basis for comparison. Given the specific resistance of the resistor material, the heat developed by

any energy input can be closely computed. From the metered electrical input, the heat energy dissipated in the element can be computed.

Electrical and gas heating compete mostly in the range from 100 to 2000 deg. F., which covers the largest part of the field of each. Although many operations using gas are conducted at temperatures above 2000 deg. F., the cost of gas fuel on these installations very nearly equals the cost of electric energy in most parts of the United States. The choice as to application is properly divided into two considerations—an economic and an engineering consideration. The recent rapid increase in the amount of current used for melting and heating shows that electricity can often compete economically where quality is paramount.

The selection of gas or electric heating appliances by a manufacturer presents a problem. Gas and electric rates are not equal from the standpoint of available heat energy. The final decision as to which to use is not generally made upon which source gives the largest amount of heat units per dollar expended, or upon which gives the greatest overall efficiency in the process, but unfortunately is largely a matter of salesmanship.

The true factor to consider in the cost of the heat energy for any process is not the absolute cost but what is the relative cost in the final cost of the product. An example might be given of a high pressure, gas-fired, semi-muffle furnace to operate up to 2000 deg. F., including furnace, compressor and motor, burners and accessories, the total cost of all being near $6000. An electric furnace to do the same work including transformers, meters, wiring and switches with the heating elements, will cost around $18,000. Both furnaces will have the same advantage as to quality of work, convenience of operation and cleanliness.

Gas-fired intermittent enamelling furnace

If it's done with heat in industry, you can do it better with gas

COST OF ENERGY

In cases where the more costly equipment delivers the heat energy to the work in a more satisfactory manner it would be both poor engineering and poor economy to buy the lower priced equipment because of price alone. Equipment that shows a high operating cost in relation to the value of the product produced may have other factors offsetting this high cost so that in the last analysis there is little difference, or the situation is reversed.

The cost of energy in fuel gas and electricity varies in different parts of the country. So many factors are concerned that a definite example for one locality would not hold good in any other. The value of heat energy from any source can be computed in cents per million B.t.u. Suppose the gas rate to industrial consumers in a certain city is 70 cents per thousand cu.ft., and the rated heat content is 585 B.t.u. per cu.ft. Then it re-

quires 1710 cu.ft. to yield 1,000,000 B.t.u., and the cost would be $1.20.

Suppose in the above case the industrial burner is able to develop but 420 B.t.u. per cu.ft. of gas burned, that is, the efficiency of the burner is 72 per cent. Then 2382 cu.ft. of gas must be burned to develop 1,000,000 B.t.u. This amount of gas by calorimeter determination contains 1,390,000 B.t.u. and the charge for it would be $1.67. From this it will be seen that the gas company charges $1.20 per 1,000,000 B.t.u. delivered, while the consumer pays $1.67 for each 1,000,000 B.t.u. utilized. This indicates that the smaller the customer's utilization percentage the greater is his gas cost.

To deliver 1,000,000 B.t.u. in heat energy generated from electric current, the heating element must develop energy equivalent to 293 kw.-hr. Not all of this energy is radiated but represents the equivalent conversion of electrical to heat energy. With gas at 70 cents per thousand cu.ft., the equivalent price of electrical energy is 0.568 per kw.-hr. Allowing for losses in the electrical system of 10 per cent, the rate for electrical energy increases to 0.63 cents per kw.-hr. The mention of such a rate for electricity may arouse some protest, but there are some plants generating their own current that meet this figure. The equilibrium between gas and electric cost, at rates that consumers can afford to pay, depends entirely on the degree of utilization of the potential energy in the fuel and how this energy can be developed to its maximum value. In many cases, gas, in spite of its lower unit cost, does not show a lower net cost.

The cost of a fuel is greater or less as it is used or wasted. In burning coal the tendency is to waste most of the energy. This is possible because a ton of coal may contain 26,000,000 B.t.u. and if it costs $5 the cost is only 19.2 cents per 1,000,000 B.t.u. If 20 per cent of the heat is utilized this heat costs 96 cents per 1,000,000 B.t.u. In the case of oil, suppose a gallon of crude oil contains 130,000 B.t.u. and costs 6 cents. Then 1,000,000 B.t.u. costs 46.2 cents. If the overall utilization of this energy is 50 per cent, the energy cost is 92.4 cents per 1,000,000 B.t.u. obtained from oil. The figuress for gas and electricity have been given above. These figures show that as the unit value of energy in any fuel increases, the percentage of utilization must increase or its use becomes prohibitive. As a consequence, the cost of a fuel is not the determining factor; but the degree of utilization is the prime, important and only factor to consider in its application in any heating process.

Publicity and Home Conditions

(Continued from page 562)

amples of the effect upon home conditions. Thousands of women are getting a new concept of the job of housewifery or home-making. The results of the urge among women for some kind of a "career," which tends to breed disdain of housekeeping, is turned homewards.

Every hour of the day the telephone rings. If it is a hot summer day the question may be: "What can I have for dinner that won't keep me in the kitchen all the afternoon?" It may be: "I have a crate of berries—more than I can use up before they spoil; how shall I can them or turn them into jam?" Or it may be: "Six guests are coming unexpectedly for dinner; what shall I have and how much shall I buy?"

The gas company's point of view in all this is, that a real service, sincerely rendered, will bring adequate return, both tangible and intangible, even though the work itself is not aimed at a direct commercial result. We think it pays. We are equally sure that it would not get the results it does if it were not as broadly planned as it is, with advertising playing its part, but only a part.

We believe in advertising, and more of it. We also believe the interests of advertising are advanced by asking it to do only that which it can do best in cooperation with other forces.

Incineration Opens a New Field of Service

The Gas-Fired Incinerator as an Important Factor in Reducing the Large Annual Fire Loss of the Nation

By A. A. NAULIN
Chairman, Gas Incineration Committee, A. G. A.

FEW people realize that there was an increase of $21,000,000.00 in the 1925 fire loss over the previous year, or a new total of $570,000,000. Leading authorities find that over 50 per cent of this tremendous loss is caused by rubbish accumulations about the home, found in such places as the basement, attic or stairway.

AN ENDORSEMENT

FROM a sanitary standpoint, incineration is a most acceptable process. If carefully carried out in a properly designed and constructed incinerator, in which the temperatures are sufficiently high to decompose the gases given off, the process can be conducted without objectionable conditions arising."—United States Public Health Service.

Those interested in fire prevention are now warning home owners against permitting paper, rubbish, rags, etc., to accumulate. Warnings of this kind are being noticed by the home owner, but what is he going to do unless some safe means for the disposal of these accumulations is offered him?

Fire prevention is now a national movement. A tremendous national fire prevention campaign is planned this October to be started off by Presidential proclamation and carried on by local chambers of commerce, school boards, fire prevention bureaus in the fire department organizations of every city.

Fire prevention by gas from domestic rubbish and garbage disposal appliances is a national service the gas industry can now offer to help the American public overcome this tremendous annual fire loss.

Gas company executives and sales or commercial managers can place this additional public service by gas before the people in their community with the firm conviction that gas is today able to render this much needed service.

One-half of our national fire loss can be prevented by placing all paper, trash, rags, rubbish and other household refuse in a gas-fired incinerator especially built for installation in our American homes, where this rubbish can be safely burned every other day, twice a week, or as often as the gas incinerator has been filled. It can be done with the absolute assurance that nothing will be left in a specially constructed ash pan but odorless, harmless ash, and only a pint of this is left when burned in properly constructed gas-fired incinerators now offered the gas industry by manufacturers who have studied thoroughly the application of safe, gas-fired appliances for the disposal of rubbish and garbage at the source, that is, in the home.

When the American public once understands that the gas industry is able to render such a remarkable service as fire prevention by gas, they will readily agree that disposal at the source of kitchen refuse in the gas-fired appliance is most desirable, giving the home owner, in addition to fire prevention, such additional benefits as elimination of the garbage can itself, with its odors, flies, and many

(Continued on page 574)

J. W. West, Jr. Is New Commercial Secretary

John W. West, Jr.

John W. West, Jr., has been appointed secretary of the Commercial Section, effective September 1st, replacing Rupert L. Burdick, resigned.

Mr. West has been a member of the A. G. A. Headquarters' Staff since Jan. 1, 1925, acting as service engineer and secretary of the Accident Prevention Committee. For the past few months he has been engaged in promoting the Blue Star Plan.

Mr. Burdick resigned to enter the printing business in New York City.

OUR NEW MEMBERS

MANUFACTURER COMPANY MEMBERS

Alexander Milburn Company, Baltimore, Md.

Lamont Corporation, New York, N. Y.

Patrol Valve Company, Cleveland, O.

American Heater Corp., St. Louis, Mo.

Walsh Fire Clay Products Co., St. Louis, Mo.

National Lead Company, New York, N. Y.

Wehrle Company, The, Newark, Ohio.

Mueller Furnace Co., L. J., Milwaukee, Wis.

ACTIVE MEMBERS

Mason, Harold Eugene, General Engineering & Management Corp., New York, N. Y.

McTernan, Felix J., 1523 Main St., Buffalo, N. Y.

Gibson, Paul F., Western United Gas & Electric Co., Aurora, Ill.

Forward, Harvey J., Albuquerque Gas & Electric Co., Albuquerque, N. M.

Luscombe, Robert Hartle, United Light & Power Co., Davenport, Ia.

Clark, Cyril B., City of St. Petersburg, St. Petersburg, Fla.

Kite, Jr., Wilson J., The Barrett Co., New York, N. Y.

Houghton, W. E., Los Angeles Gas & Electric Corp., Los Angeles, Calif.

Rieser, The Laclede Gas Light Co., St. Louis, Mo.

McAllister, Chas. L., The United Gas Improvement Co., Philadelphia, Pa.

Griest, Ellwood, The United Gas Improvement Co., Philadelphia, Pa.

Jameson, Robert H., Marlborough-Hudson Gas Co., Marlboro, Mass.

Hemmendinger, Samuel, Heating Supply Repair Co., Elizabeth, N. J.

Loomis, Ormond S., Darlo Co., Boston, Mass.

Gingrich, Hiram E., Riter Conley Co., Pittsburgh, Pa.

Karavaeff, Nicolas M., Moscow Institute of Technology, Moscow, Russia.

Niemann, Edward, General Engineering & Management Corp., New York, N. Y.

Konecny, Charles T., Pennsylvania Power & Light Co., Allentown, Pa.

Scott, Walter A., Consumers Power Co., Jackson, Mich.

Marcus, Harry H., J. A. Williams & Co., Pittsburgh, Pa.

Reinhardt, G. A., Youngstown Sheet & Tube Co., Youngstown, O.

North, Edwin, Westchester Lighting Co., Yonkers, N. Y.

Of Interest to Home Service

(Continued from page 554)

Miss Bertha L. Barnes, Terre Haute, Ind., discontinued the activities of her department during August, but reopened again September 1. In Terre Haute they have two adult classes a week and a junior class. The average attendance at the adult class is sixty, while the junior class has an average of seventy-five. A registration class was recently finished, sixty-six certificates being awarded to those women who had attended nine out of twelve lessons. The junior class's party was held July 3, with fifty-five girls receiving certificates.

Two new Home Service departments have joined the ranks. They are those that have been established at Alberquerque, New Mexico, and Lake Superior District Power Company, Ashland, Wisc.

At present Miss Marjorie Pidgeon, Director, Home Service Department, Brooklyn Borough Gas Company, Coney Island, N. Y., is conducting three cooking classes a week. Two of these are for women, and one for children. In addition, the department is taking care of appliance complaints, special attention being given to each problem presented.

A great many educational features are provided for the home-maker, and the work that has been done has attracted wide attention in the district served by the company.

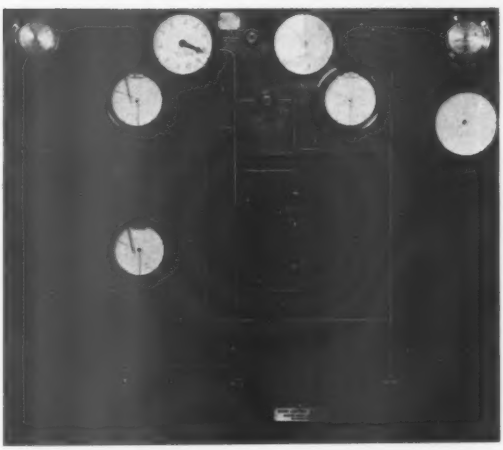
TECHNICAL SECTION
JOSEPH P. HAFTENKAMP, Chairman WALTER C. BECKJORD, Vice-Chairman
H. W. HARTMAN, Secretary

New Pressure Control at Schenectady

Is Believed To Be Only One of Its Kind in New York State; Description of Operation

By S. H. CHENEY
Schenectady, N. Y.

MAINTAINING a uniform pressure on a gas distribution system is a problem with which the gas engineer is constantly concerned. This for the reason that the successful operation of all gas appliances depends very largely on the close regulation of the gas pressure applied to the burners.



New control and instrument board

The greater extension of our gas distribution system together with the constantly increasing demand for gas in Schenectady makes a continual study of this problem necessary and to meet present conditions, a booster with a centralized control board, which we believe is the only one in New York State for controlling the pressure on gas distribution mains, was installed and is now being used.

The new regulating system consists of a booster, three electrically operated valves, two of which are 12 in. and the third 24 in., which are located near the holder, and a control panel located in the governor house. The advantages of this central control can be best understood by referring to the accompanying illustration.

The two indicators in the center nearest the top are holder indicators that show the amount of gas in the holder. Before these were installed it was necessary to climb the holder and read the number of sections, sheets and rivets which were above the water line and then calculate the amount of gas in the holder from charts. The three other gauges on the center panel are pressure recording gauges on the three transmission mains which supply gas at high pressure to the city distribution mains.

The indicator at the top of left panel is a distance pressure gauge which indicates the pressure at an outlying point of the distribution system. The water gauge just below is on the low pressure main leaving the works and is regulated by the work's governor. The indicator at the top of right hand panel is another long distance gauge which indicates the pressure at the meter located at Woodlawn where the gas received from Troy

Booster house, showing motor operated valves

is measured and the one just below this records the volume of gas received at this point.

It will also be noted by referring to the picture of the board that small strips of brass run between the various gauges. These are a duplicate lay-out of the piping system feeding the distribution mains and make it unnecessary to consult a blue print to determine what the operation of the various valves will do. This is not only a matter of convenience but also reduces errors in operating the valves. At each point in the system where a valve is located a control for an electric valve or a dummy control was placed on the board.

Troy gas enters this system at the left in the line marked "To Altamont Ave." and then goes down to the lines marked "To Erie Blvd." and "To Scotia." These lines are the transmission mains which carry the gas at high pressure to points approximately two miles from the works and there distribute it at low pressure through district governors. The valve control directly in the center of the board is known as the "By-pass" valve because it is used to by-pass gas to the holder and also as a by-pass to feed gas by the booster when it is not in operation. The valve control to the right of this is known as the outlet valve and it is with this valve that the pressure is regulated when the booster is in operation. The valve control located to the left and above the by-pass valve is known as the "Altamont valve," being directly in the line to Altamont Ave. All other valves in the picture are merely dummy valves and show locations only.

With this new equipment the pressure on various parts of the system are indicated at one point and all adjustments are also made here either by direct or remote control.

Incineration Opens a New Field

(Continued from page 571)

other evils, elimination of delayed calls by collection wagons, elimination of possible source of disease breeding germs, etc.

Fire prevention, in the writer's opinion, is the gas service the American people want now. They will gladly accept kitchen refuse disposal via the same means when they find out that a safe and efficient gas-fired domestic incinerator can be installed in their home or any place in the basement without disturbing walls or partitions by simply making a six-inch smoke pipe connection to a chimney and one-half inch gas line connection to a gas pipe, and that the cost is about 1 per cent of their investment in a $15,000 home. Prevention of the greatest destroyer of our American homes at 1 per cent certainly is a splendid investment and good judgment will urge acceptance of gas for this new service.

Gas-fired incinerators especially built for this service will reduce three bushels of rubbish and garbage with 100 cubic feet of gas per burning.

The average home owner cannot afford to be without the safety, comfort, sanitation and convenience gas incineration will bring to the home.

Can the gas industry afford to overlook this splendid opportunity to present gas as the ideal servant to the American public in its effort to reduce our national fire loss?

The Gas Incineration Committee of the American Gas Association will gladly furnish interesting facts on rubbish and garbage disposal with gas.

Associations Affiliated with A. G. A.

K. R. Boyes, Secretary, Relations with Affiliated Associations

Canadian Gas Association
Date of Affiliation—Mar. 25, 1919.
Pres.—J. J. Armstrong, Consumers Gas Co., Toronto, Ont.
Sec.-Tr.—G. W. Allen, 7 Astley Avenue, Toronto.
Conv., 1927.

Empire State Gas and Electric Association
Date of Affiliation—Nov. 21, 1919.
Pres.—E. C. Scobell, Rochester Gas & Electric Corp., Rochester, N. Y.
Chairman Gas Section—J. E. Cooper, Utica Gas & Electric Co., Utica, N. Y.
Sec.—C. H. B. Chapin, Grand Central Terminal, New York, N. Y.
Conv., Lake Placid Club, Lake Placid, N. Y., Oct. 4 and 5, 1926.

Illinois Gas Association
Date of Affiliation—Mar. 19, 1919.
Pres.—W. A. Bertke, Illinois Power & Light Corp., East St. Louis, Ill.
Sec.-Tr.—R. V. Prather, 305 Illinois Mine Workers Bldg., Springfield, Ill.
Conv., 1927.

Indiana Gas Association
Date of Affiliation—April 24, 1919.
Pres.—E. Van Arsdel, Interstate Public Service Co., Indianapolis, Ind.
Sec.-Tr.—E. J. Burke, Room 1314, Peoples Gas Bldg., Chicago, Ill.
Conv., 1927.

Michigan Gas Association
Date of Affiliation—Sept. 18, 1919.
Pres.—C. R. Henderson, Washtenaw Gas Co., Ann Arbor, Mich.
Sec.-Tr.—A. G. Schroeder, Grand Rapids Gas Light Co., Grand Rapids, Mich.
Conv., 1927.

Mid West Association
Date of Affiliation—May 21, 1919.
Pres.—Frank S. Edge, Peoples Light & Fuel Co., Grinnell, Iowa.
Sec.-Tr.—H. R. Sterrett, 551 Seventh St., Des Moines, Ia.
Conv., St. Paul, Minn., April, 1927.

Missouri Association of Public Utilities
Date of Affiliation—June 18, 1920.
Pres.—F. S. Dewey, Kansas City Power and Light Co., Kansas City, Mo.
Sec.-Tr.—F. D. Beardslee, 315 N. 12th St., St. Louis, Mo.
Conv., 1927.

New England Gas Association
Pres.—F. C. Freeman, Providence Gas Co., Providence, R. I.
Pres. Operating Div.—G. Warren Stiles, Portland Gas Light Co., Portland, Me.
Sec.-Treas. Operating Div.—F. E. Drake, Lynn Gas & Electric Co., Lynn, Mass.
Pres. Sales Div.—M. B. Webber, Marlboro-Hudson Gas Co., Boston, Mass.
Sec.-Treas. Sales Div.—J. H. Sumner, 719 Massachusetts Ave., Cambridge, Mass.
Pres. Industrial Div.— R. J. Phelan, Worcester Gas Light Co., Worcester, Mass.
Sec.-Treas. Industrial Div.—J. J. Winn, Jr., Fall River Gas Works Co., Fall River, Mass.
Conv., 1927.

New Jersey Gas Association
Date of Affiliation—April 25, 1919.
Pres.—L. N. Yetter, Atlantic City Gas Co., Atlantic City, N. J.
Sec.-Tr.—Louis Stoecker, Public Service Electric & Gas Co., Newark, N. J.
Conv., Bellevue-Stratford Hotel, Philadelphia, Pa., April 13, 1927.

Oklahoma Utilities Association
Date of Affiliation—September 16, 1925.
Pres.—J. A. Frates, Oklahoma Union Railway Co., Tulsa, Okla.
Mgr.—E. T. McKay, Oklahoma City, Okla.
Conv., 1927.

Pacific Coast Gas Association
Date of Affiliation—Sept. 18, 1919.
Pres.—F. J. Schafer, Southern California Gas Co., Los Angeles, Calif.
Exec. Sec.—Clifford Johnstone, 447 Sutter St., San Francisco, Calif.
Conv., 1927.

Pennsylvania Gas Association
Date of Affiliation—April 10, 1919.
Pres.—Allyn C. Taylor, Consumers Gas Co., Reading, Pa.
Sec.-Tr.—Geo. L. Cullen, Harrisburg Gas Co., Harrisburg, Pa.
Conv., Bellevue-Stratford Hotel, Philadelphia, Pa., April 13, 1927.

Southern Gas Association
Date of Affiliation—May 20, 1919.
Pres.—A. E. Merchant, New Orleans Public Service, Inc., New Orleans, La.
Sec.-Tr.—J. P. Connolly, 141 Meeting St., Charleston, S. C.
Conv., Atlanta, Ga., April 19, 20, 21, & 22, 1927.

Southwestern Public Service Association
Date of Affiliation—September 26, 1923.
Pres.—H. E. Borton, Mineral Wells Electric Co., Dallas, Texas.
Chairman Gas Section—C. K. Fletcher, Fort Worth Gas Co., Fort Worth, Texas.
Sec.—E. N. Willis, 403 Slaughter Bldg., Dallas, Texas.
Conv., 1927.

Wisconsin Utilities Association
Date of Affiliation—March 25, 1919.
Pres.—John St. John, Madison Gas & Electric Co., Madison, Wisc.
Exec.-Sec.—J. N. Cadby, 445 Washington Bldg., Madison, Wis.
Conv., 1927.

Geographic Divisions

Eastern States Gas Conference
Date of Formation—April 11, 1923.
Pres.—S. P. Curtis, American Gas Co., Philadelphia, Pa.
Sec.-Tr.—J. C. Smith, Consumers Gas Co., Reading, Pa.
Conv., Bellevue-Stratford Hotel, Phildelphia, Pa., April 14 & 15, 1927.

Employment Bureau

SERVICES REQUIRED

ENGINEER—Large operating company desires the services of an engineer with experience in the application of gas and the selling of industrial gas appliances. State age, past experience and salary expected. Address A. G. A.
Key No. 072.

WANTED by large gas company in middle west, salesman for industrial gas appliances. Address A. G. A.
Key No. 073.

WANTED—A fast growing Gas Syndicate operating a number of Gas Companies desires the services of an experienced gas appliance solicitor. Only trained and experienced men with good references need apply. A good opportunity for a live, wide-awake salesman. Address A. G. A.
Key No. 079.

SALESMEN—Large Public Utility Company operating in Central New York and many other states, desires to employ several securities salesmen to sell company securities. Excellent opportunity. State salary, age, experience, married or single. Address A. G. A.
Key No. 080.

SALESMEN-WATER HEATERS—Eastern Gas Company requires services of several Water Heater salesmen for campaign on Automatic Storage water heaters. Heaters will be sold on Thirty-Day Trial—no money down—one year to pay. Commissions far beyond the average will be paid. Give full particulars in first letter and how soon you will be available. Address A. G. A.
Key No. 083.

GAS ENGINEER, technically educated in fundamentals of chemistry and mechanical engineering, with some knowledge of civil and electrical engineering and familiarity with business economics, having three to ten years, preferably in design and construction of coal and water gas plants and high and low pressure distribution system. Capable of handling operating and construction problems for system of several gas properties. Permanent position. Location, New York State. In replying, please give full details of education, experience, salary desired, availability and small photograph. Address A. G. A.
Key No. 084.

INDUSTRIAL GAS SALES REPRESENTATIVE: Gas company in a Middle Atlantic State has an opening for a technical college graduate, with fundamental knowledge of application and combustion of various fuels, to sell gas for industrial uses. Must be capable of making plant surveys of heat applications. State age, education, experience and salary desired. Address A. G. A.
Key No. 085.

SALESMEN: Medium-sized Public Utility Operating Company located near New York City has opening for one gas appliance salesman, and two securities salesmen to sell gas company securities direct to consumers. State salary, age, experience, and married or single. Address A. G. A.
Key No. 086.

INDUSTRIAL GAS SALESMAN—Must have sufficient engineering experience and ability to make estimates, recommendations and demonstrations: and also must have that quality of salesmanship which can bring about the signing of contracts. Company operates in a city of approximately 200,000 inhabitants. Address A. G. A.
Key No. 088.

A NEW GAS APPLIANCE COMPANY desires to employ Gas Appliance Salesman who has had considerable experience in selling Water Heaters, boilers, etc. State age, salary expected, experience. Address A. G. A.
Key No. 089.

INDUSTRIAL GAS SALESMAN with two or more years' experience with various industrial applications to join Gas Company industrial sales force with good opportunity to develop into supervisory position. Address A. G. A.
Key No. 090.

SALESMAN—Chiefly for gas-fired steam radiators, also other gas appliances to work in New York City. One acquainted with plumbing and heating trade preferred. Salary and commission basis. Address A. G. A.
Key No. 094.

A PROGRESSIVE Gas Company in Mass. has an opening in its Industrial Gas Engineering Department for a Technical College Graduate to sell gas for industrial uses. State age, education, experience, and salary desired. A fine opportunity for the right young man. Address A. G. A.
Key No. 095.

WATER HEATER SALESMAN with experience with various installations to join Gas Company sales force with good opportunity for development. Address A. G. A.
Key No. 096.

SERVICES OFFERED

WANTED—Am open for position as appliance salesman with appliance manufacturer, experience covers over fifteen years in the sale of gas ranges, automatic water heater and heating appliances, or as manager of appliance sales department with a gas operating company, experience includes executive and technical training. Married. A1 references. Address A. G. A.
Key No. 205.

AN ENGINEER experienced in the development of large volume commercial and industrial gas business is open for position as Utility Manager or department head. Record and references on file with A. G. A. Address A. G. A.
Key No. 207.

EXECUTIVE thoroughly experienced in coke oven and water gas manufacture, distribution of gas, sale of metallurgical and domestic coke, and engineer of wide experience with ability to deal with public officials and general public. Now open for engagement. Best of references. Forty-two years old and married. Address A. G. A.
Key No. 209.

WANTED—Position as Gas Engineer or Superintendent of property serving 30,000 or more meters. Fifteen years' experience in high and low pressure distribution, coal and water gas production. Address A. G. A.
Key No. 211

YOUNG MARRIED MAN—Thirty-one years old. Thoroughly experienced in every phase of selling Gas and Electric merchandise through Public Service companies by the Meter-Reader-Salesman plan of selling, desires position with Public Utility Company. Can make a real success of your merchandising department under this plan. Have also had three years' road experience selling electrical merchandise, organizing sales crews for dealers, etc. Available about September 15 or October 1st. Address A. G. A.
Key No. 216.

TECHNICAL MAN now employed as superintendent and industrial gas engineer desires new location. Thirty-six years of age. Fourteen years' experience in coal and water gas manufacture, sales and distribution. Services available upon reasonable notice to present employer. Address A. G. A.
Key No. 217.

MANAGER OF GAS PROPERTY—with twenty-five years experience in all branches of business, specialist in building up small companies, desires to make change in position. Address A. G. A.
Key No. 218.

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AMERICAN GAS ASSOCIATION, INC.

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Secretary	H. W. HARTMAN	Ass'n Headqtrs.

SECRETARY-MANAGER	ALEXANDER FORWARD	Ass'n Headqtrs.
ASS'T SECRETARY-MANAGER	H. W. HARTMAN	Ass'n Headqtrs.